INDIA ON PLANNING

Planning

for

Liquidation

of

Unemployment and Illiteracy

The Charter of Honour, U. S. S. R. as awarded to the author.

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Planning for
Liquidation of Unemployment and Illiteracy

BY

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Panditjee, as the Chairman, India National Planning Committee, in one of its sessions at Bombay, prior to India Independance. The Author is seen on the background.

Dedicated

To

Fighters for Freedom

Of

My Country

FOREWORD

India in this crucial period of her history has produced many sons who have gone out in *perilous ventures to study in Foreign Lands* and have returned rich with experience and knowledge, and eager to *serve their Mother-Land.*

Dr. Akshaya Kumar Shaha has been one of this enthusiastic band, and has the unique experience of a long stay in Soviet Russia, where he learnt much, and had also opportunities to work in the drive for increased production in the famous *5-year plans.*

Back to India, he has sought to apply his knowledge towards solving the problems of unemployment and illiteracy. He was in the National Planning Committee set up by Congress under the Chairmanship of PANDIT JAWAHARLAL NEHRU, on whom now rests the task of regeneration of future India.

While the Report of the National Planning Committee still awaits full publication, and will most probably cover many big volumes, Dr. Shaha seeks to popularise the new ideas in his little book.

I have always followed the career of my Ex-pupil with great interest and I hope his book will appeal to all *who want to tackle the problem which now faces the New and Free India as real obstacles to path of progress and glory.*

Calcutta,
the 17th Jan., 1948.

Sd/- Satyendranath Bose,
Khaira Prof. of Physics,
University College of Science,
Calcutta.

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PREFACE

The Author is not a writer, he is a practical man—an Engineer. Also he was not in practice of English language for the last fourteen years. He as well craves apology to the readers for his unconventional frankness to the facts and figures without which it would be rather impossible to issue these pages on the basis of reality.

During his sojourn and work in foreign countries, specially in France, Germany, Russia and Iran in the time when different political waves dragged the population along diverse paths, the author realised that only by engaging the entire pupulation in productive and constructive work and further making the working period as much dense and intense as possible, the entire mass could be organised to march along one broad path—the path of construction, the path of progress to which industrial development of the country and proper education of the masses are the foundation stones.

The constructive organised toil is the next solution. The toil is worship. Life is the integral of the work done. Life of a Nation is the integral of the activities of its each and every individual. Thus the *Liquidation of Unemployment and Illiteracy* is the only practical solution.

The author, after taking active participation as a Combustion Engineer and Fuel Technologist in the socialistic construction of the U. S. S. R. during her First and Second 5-year plans, was naturally inspired with the idea of serving his own mother country and thus he returned home in February, 1938, with the idea of introducing Planned Economy in the National activities of India. In 1938, the author confidentially placed before the then Congress President, Netajee Subhas Chandra Bose, the plan of Industrial Revolution and the general plan

of Administration, according to Russian example. After six months of discussions with Netajee regarding all the details of working principles and methods applied in the U. S. S. R., Netajee felt convinced of the necessity of starting All India National Planning Committee and subsequently took a definite action in the conference of Ministers of Industries of the Congress-provinces held at Delhi on the 2nd and 3rd October, 1938.

Pandit Jawaharlal Nehru took the lead of this Planning Committee as its Chairman. And due to his inspiring guidance the Committee developed to 29 Sub-committees and above 300 experts took active part in its deliberation on the basis of social service. By the initiative of Prof. K. T. Shah, the Honorary General Secretary of the N. P. C., the Reports of these 29 Sub-committees are being published. Unfortunately, due to unforeseen factors, the realisation of these plans are being delayed. On the basis of his practical experience in the U. S. S. R. the author endeavours to place before the public the fundamental principles and methods applied in the Soviet Union for realisation of similar plans.

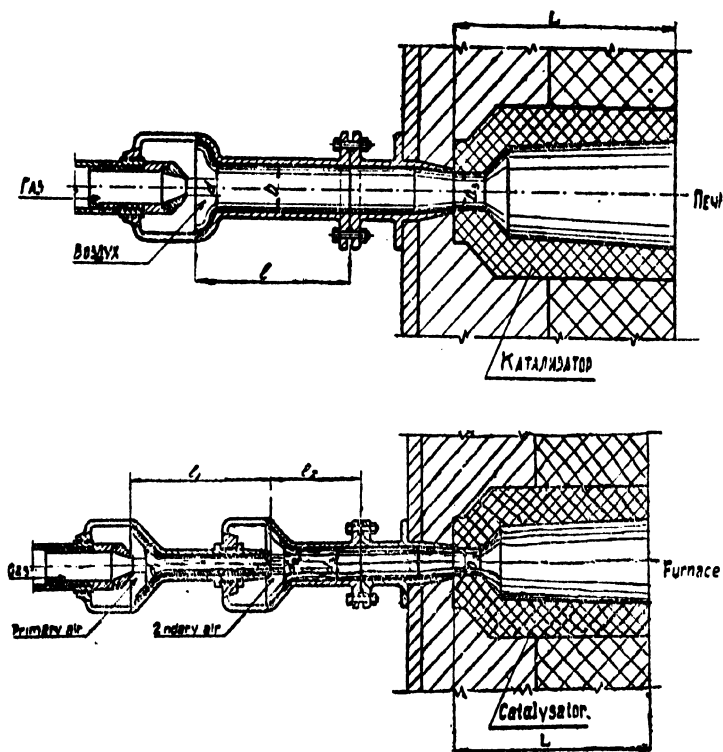
The Political Freedom alone cannot emancipate a Nation till it is accompanied by an Economic Freedom as well. Economic Freedom can result only out of the planned development of Science and Industry. On these few pages it has been the privilege of the author to explain the fundamental ways and means for the development of industries in the newly born independent country—India.

The main feature is a *Revolutionary change in switching over from Colonial system of suppression and oppression to independent method of development and progress.* Training of cadres for manufacturing machineries and not for merely maintaining operation of the foreign plants. Education for practical application in life and not for honour's sake. Foreign Inventions and Patents not for immediate payment of Royalties

for their use but for being placed before the *Swadeshi* experts to modify them according to local conditions, so as to produce National Patents. In emergency, one unit of any machine of foreign origin can serve the purpose, but by no means a second unit of the same type must be welcome. A second or a third unit practically of any machine can be copied here in this country, which possesses unlimited resources of raw materials and working brains. It must be borne in mind that nothing can be achieved without risk. On the other hand, to build a hydro-electric station with all the sets of Generators and Turbines purchased from abroad, to build a heavy chemical plant with all the accessories imported from foreign countries and under the supervision of foreign engineers is nothing but sub-consciously selling the country into Economic Slavery which is in no way better than Political Slavery.

In 1931 while on special duty in the Agricultural Machine Construction Factory at Rostov-on-Done in Russia the author came across with some peculiar cases in which the foreign firms deemed the vision of the customers by issuing instruction books for maintenance and operation of the machineries supplied by them, thus creating feelings of helpless dependence on the importers. After finding out the masqueraded secrets of the foreign burners, the author wrote a guide book in Russian language on *Flameless Combustion Process in Industry* (1934) and subsequently worked out a new Soviet Gas-burner, obtaining in a furnace 50°C higher temperature by his invented burner as compared to the imported ones.

Author's independent and active life during 1926-37 in the U. S. S. R. and from 1942-43 in the Middle-East, a Military Zone, under combined occupation of the U. S. S. R., U. S. A. and U. K. gave him ample opportunity to learn and collect facts in the practical field under diverse circumstances, which he is now privileged to place before his country-men on the pages of this book for thoughtful consideration.

Soviet Gas Burner—Author's Patent No. 28273,
Class 24/C, 10 Lelingrad, 1932.

The result of the test of the invented burner was recorded by the Factory Commission in the Act of May 25, 1932 as follows :—

Time	Temp.	Fuel	Gas	Analysis
		CO_2	O_2	CO
11-40	1230°C	19·0	0·1	0.0
12-16	1270°C	18·5	0·1	0·0
12-50	1290°C	17·5	0·4	0·8
13-10	1320°C	18·5	0·5	0·0

The max. temp. developed by imported burners from Bena Shield & Co. of Germany and Surface Combustion & Co. of America was registered 1280°C.

In conclusion, the author takes the opportunity to express his humble devotion, deep regards and infinite gratitude to his teacher Prof. Satyendranath Bose for gracing his book with few words of blessings. The hearty thanks of the author are as well due to his Russian friend and wife Mrs. Tanishka Shaha for her kind contribution to the pages of this book. Finally, the warmest gratitude of the author goes to the Publisher and Printer.

Calcutta,
4, Ganesh Ch. Avenue.
July, 1948.

The Author.

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In the snows of Moscow. Author wearing Russian winter apparel. [P. 1.

CHAPTER I

PROLOGUE

After centuries of slavery, foreign domination and subsequently after several years of War condition, our great Nation is unfortunately not only completely demoralised but intellectually almost dead—talents vanquished, literacy decayed—disunity, provincialism, racialism, favouritism, inferiority complex, self-strife, vanity, self-immolation, intrigues, devastation—reigning supreme throughout the length and breadth of the country, letting loose the display of satanic acts of discord, starvation, nakedness, mass unemployment,—humiliating conditions of existence of the mass of populace and lawlessness is the ultimate result that is glaring at our face to-day at the time when we have got the right to celebrate and to enjoy the Independence of our mother land—India.

Picture of India Today.

But what is the meaning of real Independence? Surely Independence does not mean beautiful slogans, inspiring speeches, putting forth new thesis to philosophise life and death or the replacement of white-skinned bosses in administration by coloured ones etc. The foremost meaning of Independence is freedom from material

Meaning of Independence in Reality.

want—food, clothing and shelter, combined with liquidation of unemployment and illiteracy. When this elementary freedom is obtained, the other ideals of freedom will naturally follow.

How then to save our poor country, struggling for the existence from total ruin, both Moral and Economical? It undoubtedly seems that the first step towards salvation lies in complete revolutionary change of the Philosophy of life of the nation—the factor that is absolutely essential at the start of Independence. Humanity, Brotherhood, National Consciousness and Responsibility should be practical Religion of every individual, whatsoever may be his or her personal beliefs. Clear view of the things in their reality should replace old-fashioned and worn-out ideas prevailing in the past. The result of any action should be expected according to the scientific reasons based on Truth and Economical and Physical grounds and not on Fate, Chance or Miracle.

Where Salvation lies in?

Look at what ultimate and disastrous results we have arrived at with all these old and distorted conceptions and misrepresentations of the reality. A Government Officer of our country is educated to call his servant, who is arranging for him all comforts of his life, as a "Boy" or a "Bearer", but he calls his dog by the name of "Peter" or "Julbars". A Government servant actually getting his pay from the Government Treasury, where the money is being collected from hungry half-naked peasants and labourers, business-men, rate-payers etc. in the

form of rents, taxes and so on—is accustomed to consider himself as the master of the people, and behaves accordingly whenever his help is being sought for. Of course this attitude and this mentality must be thoroughly changed and duties performed with a spirit of true service and responsibility. A post or a position held by an official, be it the Governorship of a Province, or Presidentship of the Congress, or Chairmanship of some important Committee, is considered by even many responsible persons, primarily as an honour. Yet, more correctly, it is not merely an honour, but rather a duty and stern responsibility. Spirit of competition helps much in the line of both collective and personal improvements, but grudging others and pressing them down leads to nowhere but corruption and some time even to a crime.

Meanwhile the old days of blessed commonsense and prejudices are gone-by. Ours is the age of science, technique, technology and narrow specialisation, which is the natural outcome of the present demand.

Conception of Modern Age.

There is no room for favouritism. It is the Expert who will have to decide and to direct the country's development and future prospects, not just an honest friend or a well-meaning relative. There is no room for individual selfish out-look—but one should visualise himself as a part of the vast populace of the country of which he is a unit and to which he is morally responsible, and act according to this conception, so that the summary of his activities will strive to contribute to

the welfare of the Nation, not to the welfare of his private family alone. Self-sacrifice and not personal ambition should be the real guiding principle of our new social life.

The old tricks of benevolent persons in offering some donations for starting charitable institutions such as Hospitals, Colleges, Laboratories, Temples etc. with ulterior motive of providing employment to their kins and relatives and not only realising the amount of donations within a few months but as well maintaining a permanent interest over these institutions for the benefit of their own class of people, though the major portion of the construction and maintenance comes from the public— have long ago outlived and must be dropped out of these modern times of ours, when the social consciousness of the masses is wide-awake, and when the establishment of the new order, introduction of the new ways—is the urge from without and within.

Nepotism in Disguise.

At this critical hour when our country had just crossed the threshold of Independence, the first obligation of our National Government is to throw a sympathetic glance at the 400 millions of its population of say 125 million women, 125 million men and 150 million of youngsters and children—and to act in terms of these figures, which are representing living souls, living factor by whose common efforts alone our country may be raised to the level of true Independence and happiness, combined with prosperity—a goal that can

Country means Living Souls.

be actually achieved not by speech, not by teaching and preaching or by Fate combined with vague veneration and fear before the almighty God in the eyes of ignorant masses, not by promise of future, but by Action, by Direct Action alone so that every individual of this vast populace can feel that he has actually been able to tear away the chain of the age-long slavery, so that he can breathe freely, having acquired the future security for himself and for his dear ones. Such elementary freedom in security means employment, education, medical help and old-age pension, guaranteed by the constitution of the National Government as the fundamental rights of the citizens.

Definition of Life and Nation.

Life is activity. National life is the activity of its each and every individual. This activity must be given opportunity to find its expression on the lines most suitable to one's own choice and ability. The growth of a Nation depends on the scope for development of its each and every citizen's talent and abilities, both of men and women according to their inborn inclination, and after this development—on proper utilisation of the citizen's acquired knowledge and experience.

National Cadres.

National cadres should be trained and organised as visualized above. These National Cadres will harness Natural Resources of the country—its rivers, lands, mines etc. Of course, the task of such organisation cannot belong to Political Leaders alone, whatsoever the scope of their power and whatsoever the might of their inborn

genius for administration. Nay, not less than a few hundreds of Scientists, practical workers and engineers possessing comprehensive knowledge of the country's resources and national activities should be summoned together to evolve comprehensive National Economic Plans. A non-official step in this direction was taken as early as 1938 by our Netaji Subhash Chandra Bose, whereas Pandit Jawaharlal Nehru, the Prime Minister of Indian Union to-day, took in his own time the lead of this Indian National Planning Committee as its honourable Chairman. Only with the utmost efforts of the National Cadres and the utilisation of the Natural resources of the country, according to these National Plans, a Nation can keep her natural growth and maintain her Independence in the World of free and self-respecting Nations.

It is well-known all over the world that in the administration of a country a dozen of Ministers, Members of the Cabinet or Commissioners etc. in charge of different Governmental departments or Portfolios are practically directing the destiny of the Nation. These Departments no doubt should totally cover all the aspects of National life, still very often in our country the executive sections or branches placed under this or that Ministry or Department have no practical relation with the respective Department or Ministry. The result is utter inefficiency and mass unemployment, i. e., loss of National talent and labour and thus

Steriotyped Administrative Organs.

the natural resources of the country remain unharnessed. Per example, a particular branch of Technical education, say Chemical Engineering, is placed under the Ministry of Education, the latter having not in the least knowledge of the required number of cadres, subject of their training and scope of utilisation of their services in the Factories, which are under direct jurisdiction of the Ministry of Industries. Thus for all practical purposes it is essential that there should exist some kind of living link between Ministry -in-charge of the institutions creating Cadres and the institutions which subsequently are going to utilise the services of these cadres. Superficially it may seem that Technical Education may be placed under the Minister of Education as it is the subject of Education. Yet in reality, it is the Minister of Industries who is more competent to take over the branch, as it is he who is in a position to utilise and to provide employment to the trainees of Technical Education.

It may be also stressed here that the post of a Minister is not merely an honour but is a Duty and Responsibility and it goes without saying that a duty must be fulfilled with earnestness and efficiency. The

Picture of Real Administration.

old and worn-out custom of looking upon a Ministership as an honour had outlived and instead it is an Expert who must be summoned to fulfil the respectable duty for the welfare and prosperity of the Nation, in accordance with the harmoniously worked out Plan or Plans. Herewith the

Chart No. 1.

ALL INDIA ADMINISTRATIVE (GOVERNING) PLAN.
1. Ministry of Industry.
Heavy Industry.
Mining.
Light Industry.
Cottage Industry.
Technical Education and Technical Propaganda.
2. Ministry of Agriculture.
Cattle Breeding.
Dairy Farming.
Fertilisers and Irrigation.
Agricultural Institutions.
3. Ministry of Transport.
Road Construction.
Railways.
Navigation and Ship-building.
Air-Service.
Transport Engineering Education.
4. Ministry of Education.
Primary Education.
Universities.
Art, Stage and Screen.

5.
Ministry of Public-Health.
Medical Education.
Hospitals.
Sanitation and Sanatoriums.
6.
Ministry of Finance.
TRADE Import & Export.
Banking and Insurance.
Rights of Industrial Properties.
Commercial Education.
BUDGET for all National Economy.
7.
Ministry of Defence
Law and Military Education.
Munition Production.
Protection of Law and Order.

reader is offered a brief sketch of Administrative Plan, Chart No. 1, reprinted from the Bengal Engineering College Annual, 1939 and which the author of these lines had a unique privilege of confidentially placing before Netaji Subhash Chandra Bose, the then Congress President, in February, 1938. This scheme had provided the basis for starting the All India National Planning Committee in 1938, under Congress patronage.

The great genius of Modern Russia—Lenin, had shown to the world simple and convincing practical ways to the most wonderful and miraculous achievements that can be attained by a Nation roused from its political slumber to life and activity—a Nation that before Revolution was nothing but a Nation of millions half-slaves of illiterate peasantry—Nation of discord and disunion with its more than 120 different nationalities and languages and perhaps as many different religions and beliefs.

Let us now have a glance either at the vast territory of the U. S. S. R.—its rivers, mountains, forests, planes, as well as under-ground mineral resources, with its 190 millions of inhabitants, their dwelling houses, cultural institutions, factories, work-shops, mills, power stations, railways, waterways, cultivation, cattle-breeding etc. or at any other country of the world—we observe the same, only in different magnitudes, grades and qualities.

From this observation a clear conception of two

distinct features can be obtained though they are mutually correlated :—

I. Agriculture and Industry.

or

II. Land and Machine.

or

III. Food and Progress.

Certainly the main factor to maintain and develop these two features is Humane factor, i.e., the National Cadres. Hence National Planning must start from the very fundamental consideration of the living souls, comprising the Nation, their Food, Clothing, Housing, Education, Medical Treatment, Cultural Equipment, etc. etc. To solve these problems, working hands, thinking brains, and natural resources are indispensable. With a certain maximum density of population and sufficient amount of varied natural resources, as our mother country possesses, any nation can be in a position to provide full and efficient employment to all its adults for the procurement of necessities of modern life.

Vision of a Country and the Growth of a Nation.

Let us have at this instance a concrete picture of a Nation and the national activities. A nation has its Material and Cultural needs which must be satisfied. And in order to fully satisfy these needs, all the adults of a nation might be effectively engaged. Further analysis will show indeed that a certain percentage of population will have to be engaged in

Concrete Description of National Activities.

agriculture and horticulture, animal husbandry, fishery, dairy, firming etc. in order to provide food to themselves and to the rest of the population, as well as raw material for industries. Next, to provide the nation with clothings, a certain percentage of population must necessarily be engaged in manufacturing cloths, yarns, garments etc. The third problem, the housing of population, will require certain percentage of population to be busy in preparing building materials such as bricks, tin, iron joists, pillars, etc. A further huge percentage of population may be absorbed on the jobs of supply of the consumer's goods for cultural needs of the nation, such as household furnitures, cooking utensils, shoes, glass, paper, pencil, pen, motor cars, etc. In the transport problem again—for Land Transport a large number of Locomotives, Coaches, rails etc. must be manufactured: for River Transport—steamers and boats, marine boilers, motors etc. must be built, whereas Air Transport and Communication requires Airplanes, Telephone and Morses Apparatus, Radio sets etc. To build up all these machineries as well as other machines such as Tractors, equipments for Sugar Mills, Textile Mills etc., i.e., in a word, Machines and Machine making machines—a vast percentage of the population will be absorbed. The balance will be needed for keeping internal Law and Order and for Defence.

On the given background of the full-scale development of a Nation, there is no room for unemployment. On the contrary, as in the U. S. S. R., there may

be existing a constant pressure of demand "Wanted working hands" or "Wanted Experts", because in the harmoniously organised society full employment of the adults of a nation is a natural process and necessity. Whereas the unemployment is an artificial condition created by unbalanced economy that pertains to Imperialism and here in India to colonial government, under which the colony is flooded with the ready made products of ruling nation and main occupations are filled up by the people of foreign origin. All this in a word frustrated the growth of all national activities, except the growth of population. But even not to speak of colonies, in all capitalist countries themselves there is always mass unemployment, with the false propaganda and notion that unemployment is natural and inevitable. Of course it is correct in the terms of Laissez-faire policy. But in a country like U. S. S. R. where there is Planned Economy, the word unemployment is unknown to the young generation, for whom the work of buiding up the nation is a natural obligation, as well as natural claim and right of the birth. This should be also the case with our mother country—India, after she had shaken off the chains of slavery, as visualised by our great Thinker, Pandit Jawaharlal Nehru, whom the author is proud to mention here not only as the galant Prime Minister of the Indian Union, but as well as the Honourable Chairman of the All India National Planning Committee.

The Real Cause of Unemployment.

What is National Planning? The object of National Planning is to build prosperity of a nation, liquidation of unemployment and illiteracy, maintenance of national independence and security and so forth.

National Planning Defined.

In the Article II of the Constitution of the U. S. S. R., the Economic Plan is defined as follows :—

"The economic life of the U. S. S. R. is determined and directed by the State National Economic Plan with the aim of increasing public wealth, steadily improving material condition of working people and raising their cultural level, as well as consolidating the independence of the U. S. S. R. and strengthening its defence capacity."

In order to fulfil the above mentioned task comes the creation of administrative organ "National Planning Committee". The first problem of the Committee is to visualise comprehensively all the natural resources of the country as well as different aspects of national life and activities, so as to arrive at several fundamental divisions for the convenience of administration on the background of a clear view of the social aspects as a whole.

Let us have a concrete analysis of the situation. The foremost and the first problem of a Nation is to provide FOOD to the population—the purpose that may engage something like 20% of the population in different branches of cultivation, so that 50% of population could depend upon Agriculture. Compared to this in India to-day

Concrete Example of Planning.

348 millions people, i.e., roughly 87% of population depends on Agriculture. This is why the conditions of our people are so very miserable, not to say precarious, and this is why our people are in constant want of wholesome food, clothing and shelter, not to speak of any cultural amenities. It naturally follows that immediate steps should be taken to divert at least 108 millions of our people to some other national activities and vocations and those steps will ease the pressure on land and automatically the living conditions of the remaining 240 millions peasants will improve, even without taking recourse towards introduction of scientific methods of cultivation and bringing more waste lands under cultivation.

If out of our population of 400 millions, 240 millions are left to depend upon Agriculture, our National Government will be faced only with 260 millions to be provided with material needs. Out of this figure nearly 100 millions can be supposed to be adults—in average 50 million men and 50 million women and the rest 60 million youngsters and children. Out of these 50 million women it can be supposed that nearly 25 million will be willing, capable and free to take up an employment. Thus our Government is to provide nearly 75 million people with some kind of suitable vocations. Such universal employment in our mother land would be of course probable and possible in the course of the first 5-year Plan. But to be humane and to do justice, just in immediate future, it appears to us that the Govern-

ment may find itself fully capable of providing with employment at least one member out of each family. Such policy is a foundation stone towards solving the problem of unemployment. It had been devised and introduced in Russia at the start of Soviet Rule by her great leader—Lenin. Taking in average that Indian family consists of 5 persons, 32 million families will represent 160 millions of our population. An approximate idea is given below as to how these 32 million persons can be employed according to their choice and ability to effectively serve the Nation, provided that Industries are Nationalised or strictly controlled by the State and import of foreign goods is restricted so as not to mar the growth of National Industries.

1. Heavy Industry—inclusive of Iron, Steel, Locomotives, Turbo-generators, Boilers, Prime-movers etc.—can absorbe as much as 8 millions.

2. Light Industry—inclusive of Cotton mills, Jute mills, Hosiery, Foot-wear, Glass, Pottery and the like can employ 5 millions.

3. Cottage Industries—can engage 4 millions.

4. Transport and Communications—can provide with suitable vocations to 4 million persons.

5. Supply and Commerce can engage about 3 millions.

6. Defence of the country can be secured by a military personnel and staff of about 3½ millions.

7. Administration of the country, including all remote units, can be effectively managed by say

2 million persons (in Russia it is managed by about 1,000000 members of the Communist Party).

8. Education and Art can take in 2 million persons.

9. Medical services and sanitation—so essential in unhealthy sub-tropical regions of our country—may absorb not less than ¼ million workers.

10. Internal order and peace of the country can be maintained by Militia (Police—being an imperialistic term) of say about ¼ million personnel.

All these figures put up together will answer for 32 million persons, whereas initial full employment, in the term of a family unit, striking at the bottom of nepotism, can be achieved without much difficulty.

One will be naturally eager to know how all the public Departments of a Government mentioned above —at present our National Government—can be financed and supported. In one word, how our own National Industries can provide sufficient funds for the growth and development of our Nation ? The value of import of the machineries into our country—the machineries which maintain our National Industries in running order—is on average for the year 1936-37 about Rs. 14 crores. The author had assured Netaji Subhas Chandra Bose as early as 1938, while proposing to start All-India National Planning Committee on the lines of GOSPLAN of the U. S. S. R., that capital spent within 5 years for importing fundamental machineries into India will suffice to establish the

Arithmetical Figures Reveal the Truth and Solve the Illusion.

required work-shops for manufacturing and supplying our National Industries with the required equipment, i.e., machineries similar to those of foreign make but made in our own country, just what the U. S. S. R. did during the years of blocade by European capitalistic States, which followed Russian October Revolution.

Now, after working in all practical details in the National Planning Committee for several years, it had been happily disclosed that not to speak in the terms of crores worth of import, only the amount spent on six months import of the machineries will provide sufficient margin to establish work-shops, in which our own *swadeshi* machineries could be manufactured.

1. For example, import of light mechanical machineries such as Motor Cars, Tractors, Cycles, Air-Crafts, machineries for equipment of Textile, Jute and Cotton Mills etc. cost Rs. 804·7 lakhs for the year 1936-37, whereas the establishment of work-shops to produce similar machineries will require Rs. 300 lakhs only, i. e., less than half of the amount of the yearly import.

2. Import of heavy machineries such as Locomotives, Boilers, Pumps, machineries for Rice, Flour, Paper, Sugar Mills etc. for the year 1936-37 cost Rs. 676·5 lakhs, whereas starting of workshops to manufacture similar machineries will involve an expenditure of only Rs. 317 lakhs.

3. Import of copper wire and cable, Telegraph and Telephone wire cost Rs. 132·1 lakhs for the year

1936-37, while the establishment of a factory producing these wires will cost Rs. 53 lakhs only.

For further and detailed particulars the interested readers may be referred to the Report of Engineering Industries Sub-Committee, N. P. C., with the remark that many similar startling revelations may be made in the Reports of other Sub-Committees as well, with the bright prospect of our Mother-land being independent and prosperous in the course of only a few 5-year Plans, in the same way as Soviet Russia, provided the lead is taken by the right kind of administrators and executives to guide her destinies, as we undoubtedly had in the illustrious personality of our noble and daring Netaji Subhas Chandra Bose and as we have at present in our noble and gallant fighter for complete Independence—Pandit Jawaharlal Nehru.

CHAPTER II

A GLANCE AT THE PAST

(Historical Survey of Russia)

(By Mrs. Tatiana Shaha-Sadina)

Planned Economy and National Culture.

Those who are interested with the problems of planning in India often search for a reply to their many complicated questions in the smooth operation and harmony of the Planned Economy of modern Russia. As, however, a Planned Economy, amongst various factors, should necessarily bear a close relationship to psychological make-up of the nation concerned, and as this psychological make-up or so-called national culture is evolved in the course of the slow historic process of the growth of the nation and country concerned, at least a brief survey of the history is essential for knowledge of the country and the people and subsequently a correct understanding of Planning.

Moreover for an Indian reader a short glance at Russian History would prove to be of immense interest by the series of the most striking analogies with the history of India. Indeed like India, under Great Mughals and later on under British Empire—Russia went through along period of slavery under Muslim domination. Like India, again, Russia was faced with the burning problem of National Minorities. And last, but not least, as there is definite relationship between India and Russia, in blood, as well as in some features

of psychological make-up, the Soviet Planned Economy that suits Russia and her national culture, may as well with some alterations suit India, especially with regard to her multi-national composition, with variety of customs, languages and cultures.

The emphasis is being laid on the strong and resolute actions of Russian Government or of the individuals concerned with the destinies of Russia, during varied crucial periods of her history, beginning from Gostomisl, Ivan III, Peter the Great, Alexander II and ending with Trotsky and his unsuccessful experiment of the First Russian Revolution, followed in the years to come by Lenin's October Revolution and establishment of the Soviet Government. These strong and resolute policies, without compromise and hesitation are alone responsible for building up a powerful, healthy and prosperous nation, as modern Russia is to-day. These firm and resolute policies are also responsible for the general welfare of the nation, as well as shaping the growth of the nation within the framework of actual Planned Economy.

In comparison with the East, and India in particular, Russia is a very young country—as Russia, she recalls to her memory not more than 800 years of the existence. But within this 800 years of her glorious history, Russia from a pretty wild condition has raised to the high level of culture as well as from a small country she turned to be $\frac{1}{6}$ of the world.

Down into Centuries.

Little is known of Russia's history beyond the

period of some 800 years ago, except the fact that it was a waste land, populated by Scithians, whom Herodotus, the noble Greek Historian and traveller, describes to us as savage and ruthless warriors, who in their martial campaigns penetrated as far as to the Northern India, leaving their savage, noble and militant blood in the Sikhs and Jats of the Punjab.

However, since about 800 years ago, more regular Historical datas record that the regions now known as European Russia, were populated by different half-wild tribes, named "Drevliane", "Poliane", "Krevliane" and others. They were following rules of Patriarchate and were governed each by its own prince. Princes of different tribes, or so-called "Clans" were in constant enmity with each other and thus the whole country was quite in disorder. At last, one great political philosopher of that time, by the name Gostomisl, whom all princes held in great veneration and esteem, had convinced the princes to unite together. But who would be the overlord, the king, then? Gostomisl advised to send messengers abroad and to invite some noble man of foreign origin to take up the leadership over all the united tribes and to become father of the land. Messengers went near to Lithonia and gave their proposal to prince Ruric of Lithonian tribe "Russa"—"Our land is waste and rich, but there is no order in it. Come and rule over us." Ruric and his two Royal brothers Sineus and Truvor agreed and named their new Kingdom

Origin of Russia.

"Russia". Since that time and upto the Revolution of 1917 Russia used to be ruled by direct or indirect descendants of Ruric. All Russian Tzars as well as Russian most aristocratic families were "Rurikovichi", i.e., counted their geneology from the Ruric's blood.

Religion of old Russia was primitive worship of the nature, the principal gods being Perun (Fire), Jarillo (Sun) and later on Stribog (God of War), and here in religious rituals we also find a striking resemblance to India—there used to be a custom of burning the widows together with the bodies of their deceased husbands. Specially strict was this custom in the case of the nobility. As soon as some noble man was dead and his body was placed on funeral pire, (as of old Russians used to burn their deads, not to bury them), priest performing the ceremony used to kill with sacred knife the beloved horse of the departed as well as his favourite widow, blood of both falling on the dead body. Ashes used to be gathered and buried in the earth, under a high earth knoll, called by Russians "Kurgan". As nobler was the deceased, as higher was his tomb. Many articles of personal use were enshrined in the tomb together with the ashes, as ancient Russians firmly believed that after his departure from this world the deceased will have to live a life similar to that previous to his death. Due to this peculiar belief, along with the excavation of "kurgans" were unearthed many a valuable historical relics that serve as indications on life, traditions and

From Heathendom to Christianity.

culture of that distant centuries—the only surviving evidence of the past, besides memoirs of some foreign travellers and amongst them Herodotus and Plinee, who left us in possession of some accounts and datas, on which it was possible to base History of old Russia. Russia abandoned her old religion of Nature-worship and became a Christian country in the reign of Vladimir the Saint (972-1015), who had conquered a considerable portion of Visantic Empire and placed his armours over the gates of Constantinople, the then Capital of Visantee. Vladimir left Constantinople at liberty, adopted himself and made the whole Russia to adopt Christian doctrine, and subsequently married Princess Anne Paleologue, sister of defeated Emperor Konstantim, for whose sake he discarded his previous 800 wives—the ancient Russians following the rules of poligamy. Thus Russian Christian Church became the branch of the Orthodox Greek Church.

The Tartar Invasion.

Next and the most remarkable period of Russian History is slavery under Tartars—a period covering about 200 years. The invading hordes of Tartars came from the East, whereupon after a few severe struggles Sultan Chinghiz Khan and later on Batyi over-powered and conquered Russia. Those were years of humiliation and untold suffering. Tartars plundered the country, abducted Russian girls and women, tortured people all around, and treated defeated Russians absolutely as slaves. Russian women, therefore, took recourse to closing themselves within their homes as well as

covering their faces with thick veils—a custom that survived long after the last trace of Tartar domination was wiped away. Another striking resemblance with India: Purdah system, specially strict in Northern parts of India, exists since the time of Muslim invasion. In Southern India, never dominated by Muslims, women generally enjoy much greater freedom. In Asiatic Russia—Russian Turkestan (modern Capital town Taskent, old Capital—Samarkand or Afrosiab)—which was for a pretty long time in the possession of Timur the Lame—this custom of veiling faces of the fairer sex survived upto as late as the Great October Revolution.

Centralisation of Russia and Origin of Moscow.

Russia had overthrown Tartars in the reign of Ivan III. Before him, however, Ivan Kalita or Ivan the Gatherer (1328-1341) spared no efforts and was successful in uniting Russia into a strong centralised Kingdom, as shortly upon Ruric's death Russia again was divided amongst different princes, decendants of Ruric. Ivan the Gatherer was telling princes "All of you want to be free—be brotherly united. The united strength is unconquerable. Forget your own small and selfish interests and remember only that your mother country is in slavery and is in the danger of the greatest peril, whereas the honour of your daughters, wives and sisters is at the hands of the ignoble foe, who knows no mercy"—how strangely this moving appeal applies to India to-day! Ivan Kalita had laid the foundation of Moscow. Before,

Moscow was a mere Zamindary of Boyarin Kutchka. Ivan Kalita by some means or other got displeased with Kutchka, ordered him to be beheaded, and as his Zamindary was a lovely spot, just situated on a beautiful river, Ivan Kalita started building a town. In translation from Finish language Moscow or Moskva by Russian pronunciation, means :—Mos = dirty, Kva = water. In fact, Moscow River is somewhat dirty, not transparent, which does not minimise the beauty of her banks.

The political activities of Ivan Kalita cleared the way for Ivan III. The united Russia presented a front ready to face the struggle. One fine morning the Messengers of Tatarian Khan came to gather usual "Salami" (tribute) from Ivan III. They came in golden dresses bearing the portrait of their Khan. Generally it was the custom that Russian princes used to kneel before the portrait, touching the ground by their forehead as a sign of humble submission while delivering the tribute. Ivan III instead of those signs of customary salute tore the portrait into pieces before the eyes of the stunned Tartars, threw it on the ground and ordered his guards to cut off the heads of the Messengers. Since that day he declared an open and sacred war against Tartars and with glorious success set at liberty the whole of Central Russia.

The End of Slavery Under Tartar.

Ivan IV, more known as Ivan the Terrible, had totally and ruthlessly eliminated all the remaining

strongholds of the Tartars. The very long and interesting period of the reign of Ivan IV, with its monstrous cruelty, was actually a firey mark on the pages of Russian History. Amongst his various crimes, the recollection of which makes one to shiver with horror, Ivan the Terrible is known by murdering his eldest son Prince Ivan. Another most remarkable fact is that in the reign of Ivan IV was annexed to Russia the whole of Siberia, the waste and golden land of untold and unexplored riches. Siberia was conquered in a vary peculiar way. Without any organised military campaign, it was defeated by Ermak Timofeevich, a notorious dacoit and murderer, who escaped to unknown wilderness of Siberia from the wrath of the Tzar and pursuance of the low. Ermak and his reckless companions offered few battles to wild tribes, populating Siberia, scored a glorious success over them driving them to the further North and went to Moscow, where kneeling before Ivan the Terrible they presented him Siberia. Of course they received a complete obliviation of their past crimes, while Ermak was made some kind of a Viceroy over Siberia. He died shortly afterwards being drowned in the Enisei River under the weight of the gold armours presented to him by the Tzar, while trying to swim across.

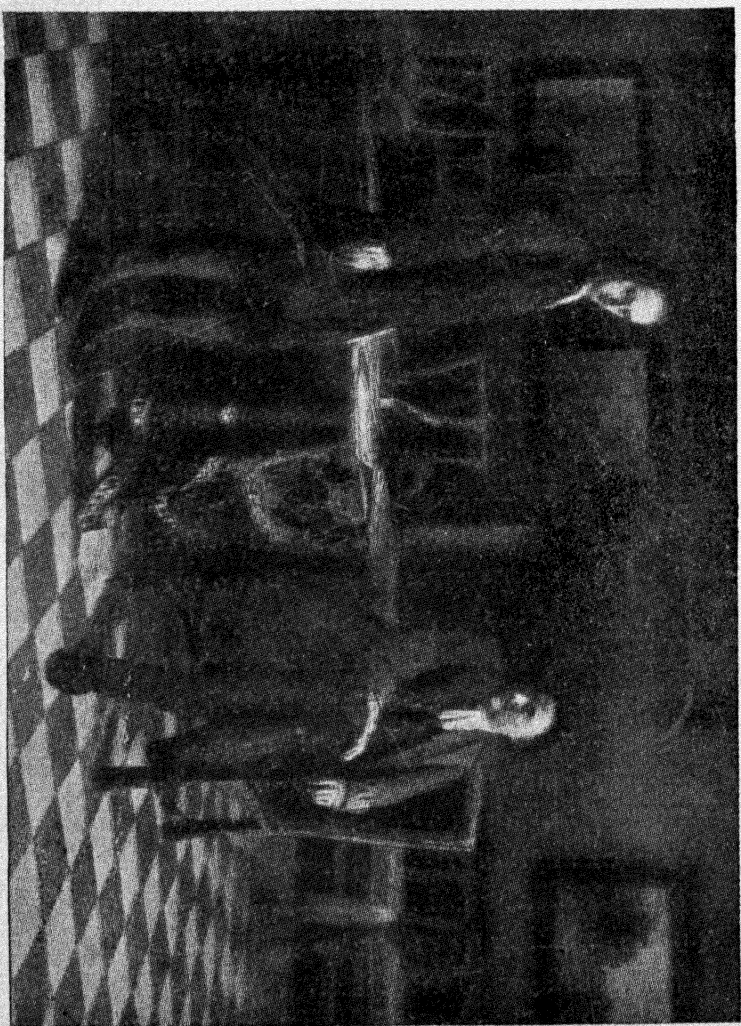
Ivan the Terrible.

With Ivan the Terrible, his eldest son being slain by his own hands, and his younger leaving no heir, after a short reign, due to weakness of health—

ended dynasty of direct Rurikovichi, and after a short reign of Boris Godunov of Tatarian origin—the former right hand of Ivan IV—began dynasty of Romanoffs—indirect Rurikovichi. The first two Tzars of Romanoff dynasty Michael and Alexis are not so remarkable, except that with the ascending to the throne of child Michael, Poland tried, though in vain, to capture Western Russia, whereas the peaceful and blessed reign of Alexis is marked by annexation to Russia of Ukraine. Ukraine, by the advice of her illustrious Getman (Honourable leader—some kind of a president)—Bogdan Khmelnitzkee, came by itself under "the high protection of white Russian Tzar", being exhausted by constant guerilla war-fare with Poland and Turkey.

The End of Ruric's and Beginning of Romanoff's Dynasty.

But the third Romanoff Tzar—Peter Alekseevich, later on Peter the Great, came as a dazzling Comet to change the very face of Russia, to shake and upturn old ways of Russian life, with its Purdah system, its extreme prejudices and all peculiarities, by which Russia differed so much from other European countries and was considered by the latter as wild. Peter himself from his very youthful age discarded all royal customs. While previous Russian Tzars were considered by the people almost as gods on earth, and were as a rule leading easy life of laziness and pleasure, Peter toiled as a simple worker together with other laymen. It is not exaggeration that by his own hands he built his small

Peter the Great as Dynamic Power.

Peter the Great remonstrates his son.

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cottage at the new town of Petrograd, or performed a lot of masonic works in erecting a new citadel in his summer residence at Preobrajenskoe, some 200 miles away from Moscow. At the age of 18, as a shy, awkwardly tall and half-wild youth he went incognito throughout Europe, stopped for a year in Holland and under the false name of Master Peter Alekseevich studied in practice the art of Ship-building, toiling side by side with other Hollandian Masters, who only a bit too late, in fact on the eve of Peter's departure to Russia, had realised what an illustrious person they had for their comrade. In the old-days Russia it was impossible even to think that "White and the true Christian" Russian Tzar could venture to go to unholly Europe or to mix with the Germans, as it was the custom of old Russians to call all foreigners "Germans", much the same as in India all white-skinned foreigners are called "Farengis". Peter alone had conceived the idea that a bright future for Russia lies in Europeanisation accompanied by industrialisation. And he started a ruthless fight with old Russian aristocrats, so-called "boyars" who from the very outset opposed this Europeanisation. He even went so far as to divorce and throw into a Monastery as a nun his first orthodox wife Eudoxy and when some years later prince Alexis, his son by that unfortunate wife, took side with the camp of the opposition, he did not hesitate to put to death his rebel-son in order to save Russia from possible turning back into old wilderness, poverty and weakness. He did not believe that good

results could be reached by a slow gradual process. He was changing the country abruptly, roughly, without any mercy, without any abatement. When his orders were proclaimed that Russians were to abandon their ancient dresses and to take to European costumes, those who disobeyed were simply dishonoured in the streets, as the flares of their floor-length national gowns were shortened to the size of European coat by the scissors of specially appointed barbers, so that the victim could reach his home in the cloths just enough to cover his shame. This was a cruel lesson, but also the most effective one. To evade a public dishonour even the most proud nobles started rapidly changing their dresses into those "monkey german" ones, though it caused many a one to shed bitter tears, while bidding good-by to the traditions of the "happy old times". Russians considered their beards as a proud attribute of beauty, at the same time they were impressed by the priests that it was a sin to cut the beard. The verdict against beard, proclaimed by Peter, came therefore as the bolt from the blue. But the measures taken were most convincing. The obstinates preserving their beards used to be caught in the streets by specially appointed royal barbers and their beards cut off in the most offensive and comic fashion after which there was no other way but to cut it off cleanly with the razor, though with tears of rage and shame for "femalelike naked cheeks and mouth".

There was purdah system still prevailing and the womenfolk were badly oppressed specially

amongst nobles. Peter's orders came with rapidity of lightning exacting all well-to-do citizens to start some kind of evening parties, so called "Assemblies," on Sundays. Guests were expected to join these parties with their daughters and wives dressed in low-necked European evening frocks. Fear and resentment of the fairer sex soon gave way to genuine pleasure at this first manifestation of freedom. Manner in which all these reforms were being introduced seemed like a huge comedy for the people of that time. However, determined actions of Peter the Great changed the country into that of European one, and from wild and practically weak kingdom formed a powerful state. In this respect, these remind the stern actions of Soviet Govt., through which alone the Modern Russia had reached her status of one of the biggest powers of the world.

The End of Purdah.

Needless to mention that all old Russian aristocrats—boyars, zamindars, nobility—stood against Peter the Great with helpless rage and unlimited hatred. Far from helping him, they tried to oppose, to put hindrance in all possible ways. As to the priests, almost always illiterate poor fanatics as they were, they were ready to proclaim Peter to be an Anti-Christ, thus endeavouring to create fear and animosity of the people towards their daring Emperor. Meanwhile it were these two classes—priests and noblility—that were respected "castes" of the society,

The Decline of Aristocracy.

support and hope of the country. However, once finding them in opposition Peter with his reckless and abrupt courage and determination did not hesitate to turn them his back.

The Rising of Merchants.

It was at this stage that almost unexpectedly an essential help came to him from the class of Merchants, rich but oppressed by the nobility, oppressed to such an extent that a Russian Merchant of those days, however millionaire he might have been, could not add to his name that of his father, according to traditional Russian custom. This was special privilege of the upper "castes". Any aristocrat, the worst possible poor, even that dying of starvation, could officially write Ivan Matveevich or Sergei Vasilievich. He who was a merchant, inspite of all his wealth and personal qualities, was simply Matweika, Ivashka and so on. Peter, on wise advice of one of his old uncles, provided the merchants with this outward respect, giving them legal right to use the parental name and received in return sincere gratitude and confidence, readiness to help, even with capital of which Peter was in such a distressing shortage. And it was also out of the merchants that came pioneers for Peter's industries, navigation, foreign trade and other new enterprises. Young sons of the merchants went to Europe on different commissions of the state, or simply for training, on quite equal footing with the sons of the nobility and later on formed the new faithful cadres for Peter.

As a born leader of his time Peter understood with his determined genius that not from decaying, degenerated and practically dying class of nobility, he could get support and inspiration, but he is to raise, to evoke a new power, for backing of his gigantic reforms, for successful creation of a new powerful state.

Peter the Great led few successful wars and in fighting Sweden, by that time the first-class military power of Europe, won possession over some portions of Baltic coast, thus acquiring for Russia an "open window" to the West. This has provided Russia with flourishing Export-import business, opened new opportunities for starting and developing Industries and enriched the country to a considerable extent. Foreign workers and experts flocked to Russia in search of new fortunes and their skill and knowledge helped Russia to emerge out of her age-long slumber and lethargy towards new buoyant active life and to build her prosperity.

Russia acquires an Open Window to the West.

The unfortunate outcome however of the reign of Peter is the beginning of "peasant's slavery"—Krepostnoe Pravo, as God-fearing orthodox Russian peasants started to migrate in considerable congregations towards unknown regions of Siberia, in endeavour to escape being conscripted as working hands for industries started by Peter. Peter, therefore, was obliged to promulgate an emergency order which in order to

Peasant's Slavery.

prevent the migration, tied peasants to the lands of the Zamindars, prohibiting them to move away from these lands, so as to be available for recruitment to the state industries. The Zamindars on the other hand seized the opportunity with their usual greed and began treating the tied peasants as some kind of slaves, and some years later developed even open trafic in peasants which were sold or exchanged, much the same as Negroes in Europe and America. The cruelty, the inhuman tortures, the crimes perpetrated against peasants by their overlords, can be scarcely described to an outsider and the reader of these pages would shiver in horror to read the accounts of these by-gone days in the annals of Russian history.

With the death of Peter the Great, which came rather quite of a sudden, his worthy wife and heir to the throne, Catherine I, a commoner of the German stock, but with genuinely great heart and equally great love for Russia—continued and executed many of his reforms, amongst those of the highest value being the initiation of the Russian Academy of Sciences in Leningrad, in the beginning of the 18th century.

The Two Catherines.

Catherine greatly availed of the inspiring help from her late royal husband's Prime Minister A. Menshikov whom previously Peter elevated to this high rank from a miserable commoner.

But it was only later that the Second and still greater Catherine, in a successful war with Turkey,

led by renowned Field-Marshal Suvorof, conquered Crimea, then known as Tavrida, the flourishing colony of Ancient Greece—thus Russia got a free access to the Black Sea. Yet, for a pretty long time Russian ships could not get out freely to the Mediterranian, as the Strait of Dardanelles were in the uncompromising hands of Turkey.

The reign of Catherine the Great can boast of the greatest Scientist of Russia, poet and a first Metallurgist worth the name—Michael Visilievitch Lomonosoff.

Two successive waves of the most bloody revolts however rocked the very foundation of otherwise prosperous kingdom of Catherine the Great, one of the Emelian Pugachof, another of Stepan Rasin. Emelian Pugachof, a daring Cossak from the Done River declared himself to be no less than Peter III, the late husband of Russian Tzarina, who died in prison, thrown there by his wife Catherine. Promising freedom to the masses of enslaved peasantry he managed to draw a very large force and was seriously menacing Moscow. The Tzarina succeeded in finally defeating him, although the efforts put into that defeat surpassed those of foreign Wars.

First Revolt.

Stepan Rasin, actually an ordinary dacoit, based his dacoities on the very original principles. Roaming with his associates along Mother-Volga, as this river is affectionately called in Russia,—he used to plunder the vessels belonging to the rich merchants and distributed the booty amongst the poor. Personality of Stepan Rasin

Second Revolt.

bears the charm of daring romance. He can be described as the first Russian Revolutionary. Russian masses tributed deep respect to his memory even before Revolution, notwithstanding the fact that he perished on Scafold as a thief and dacoit, while after Revolution he had been proclaimed as a National hero. With his name are associated majority of the charming and well-famed Volga songs.

Alexander I, grandson of Catherine, who succeeded her as heir, is mostly known through his war with Napoleon Bonaparte. Excellent picture of this war, as well as of Russian Society of that period is given by Russia's great writer Leo Tolstoi, in his marvellous novel "War and Peace", translated into all principal European languages. Napoleon Bonaparte was defeated by the Russians in 1812 at Moscow, and ultimately lost his position as the World Dictator. Inspite of this fact Russia did not loose her friendly terms with France. At the same time the noble courage of Napoleon and his great army, which can be described as nothing less but a progressive force and which probably would win struggle with Russia if terrible Russian winter would not wipe out $\frac{3}{4}$ of the French soldiers—is evident and excities sincere admiration of the Russians, who bear nothing but sympathy towards this greatest strategist of his time, whose life is a unique tragedy, but before whom once the whole world knelt in submission if not in fear.

The Defeat of Napoleon.

Alexander I leaving no heir ,his brother, Nicolas I

dreaded for his cruelty, ascended to the throne. Yet, before he has got even time to be crowned a thunderous powerfully organised armed revolt

Decembrists.

swept over Petrograd. For three days and three nights continuously the regular army of Nicolas fought the army of the Revolutionaries, so-called "Decembrists", who bore this peculiar name because their revolt took place in December. Those who led the Revolt were people of high education and rank, belonging to the best aristocratic families of Russia, who by the very reason of their education refused to put up any longer with all extremities and tyranny of autocratic Tzarist regime resulting in untold misery of Russian masses, especially those of the peasantry. Decembrists planned a thorough reformation of the whole administrative system and, of course, dethronement of the Tzar. However, Nicolas succeeded in defeating the revolt with brutal cruelty. Majority of the soldiers of the rebel army as well as their lower and higher officers were beaten to death by the iron rods "spizrutens",—the favourite punishment with Nicolas. Five principal Decembrist-leaders perished on the scaffold, while others suffered their life-long exile, in remote corners of Siberia. Thus ended another unsuccessful attempt to liberate Russia, and especially Russian peasants from in human oppression. Only this time the revolt came from the upper layer of the society, who uptil now was the stronghold of Monarchy.

Decembrists left a touch of melancholic chivalry on

the pages of Russian history and by their renowned contemporaries—the flowers of Russian literary world—were sang as selfless and noble Cursaders for human rights and justice in Russia. Those contemporaries of Decembrists, very often their intimate friends, who adorned the epoch of Alexander and Nicolas I, as the stars of Russian poetry and literature were :—Alexander Sergeevich Pushkin—the Byron of Russia, Ivan Sergeevich Tourgenev, Lermontov, Jukovskee—the father of white verses in Russian and chief educationist in the nursery of the heir to the Russian throne Prince Alexander, later on Emperor Alexander II, the Liberator ; Krilov, one of the 4 Fable writers of the world, Griboedof, later on Russian Ambassador to the Shah of Persia, killed by Persian fanatics in Teheran, Gogol the genuine humorist and one of the creators of the Ukrainian literature as such, and many others less renowned but nevertheless dazzling stars in the Russian literary society.

The Stars of Literature.

Much under the impression of freedom-loving, inspiring genius of his beloved teacher Jukovskee Alexander II, who succeeded Nicolas I, shortly on his ascending the throne promulgated a law of Liberation, setting at liberty Russian peasants from the bondage of their slavery. This was one of the most stiring events in Russian history, although many of the later historians of Russia, especially those belonging to Soviet period, are trying to impress their students and

Liberation of peasants.

readers that had this timely step to curtail the rights and oppressions of zamindars not been taken from "up" it was bound to be forced on ruling classes from "down", i.e., by masses themselves, whose hardly tried submission and patience was coming to an end under the weight of countless crimes and unhard-of cruelty, perpetrated by aristocrats and zamindars. Those who remember pathetic novel of Bicher Stoy "Uncle Tom's Cottage"—may well apply it to the "white slaves" of Russia—Russian peasants—yet even this may fall short to help to imagine all atrocities and beastly humiliations which Russian peasants suffered at the hands of their overlords, of being sold, or exchanged for dogs and horses, of being separated from their wives and families, their daughters dishonoured by the guests or the landlord himself, their wives ordered to sucle with their breasts the litters of the hunting dogs belonging to their lord etc.

Yet, even all those bitter memories were not enough for illiterate Russian masses, to shake off their blind veneration for the Tzar, "the little father" and autocratic rule continued unabated for a few more decades. Nay, this blind veneration was enhanced even to the point of worship by the graceful act of Alexander—the Liberator.

The last Romans.

The last Russian Tzar, Nicolas II, however, had to pay with his own and his son's life for the crimes and maladjustments committed by his predecessors although he was not more guilty, neither had he been marked

by any acts of particular cruelty. His failure came mainly due to the two badly conducted and badly lost wars, which alone offered sufficient field for the seeds of Revolution to be sown in.

The early epoch of Nicolas II is marked by the first unsuccessful February Revolution, led by Trotsky, contrary to the wishes of Lenin, who thought it was too early for a start; but young and hot-blooded Trotsky would not agree to wait longer. Trotsky left Switzerland, that time the headquarters of Russian Revolutionaries, and crossed the border of Russia. On 21st February, 1905, in Petrograd, thousands of workers were taken, according to his plan, in organised procession towards the Winter Palace of the Tzar. This was a singularly peaceful procession, led by a priest, with the images of Christ and Saints displayed instead of banners, the workers being accompanied by their children and their wives, very often working women themselves. But the guilty conscience of the Tzar and his sorrounding nobles made them to get scared by the appearance of the vast crowd of populace and the Tzar's bodyguards got order to fire shots of artillery. The workers did not get the chance to place their petition at the feet of the "little father" for some betterment of their miserable lot. Their prayer was met with bullets, thousands of them including women and children fell dead and wounded on the stony pavement around the palace. Thus for the first time, on that "Blood

The Failure of the First Revolution.

Sunday" of February, was visibly shaken the confidence of Russian masses into their godly Tzar. Unsuccessful as was this February Revolution, Lenin congratulated Trotsky on his return to Switzerland, but for the staggering lesson this revolution provided for the masses of not only Russia but practically of many a countries abroad. In Russia, this wanton massacre, came almost simultaneously with the defeat that Russian Monarchy had suffered from the hands of Japan, though it must be aknowledged that this dramatic defeat was made possible only by secret backing of Japan and Great Britain.

The failure of the first February Revolution made Lenin to proclaim with loud voice that it was madness on the part of the proletarian masses to expect that their lot can be redressed by the grace of some godly ruler or king or the Tzar, madness parallel only to a supposition that a wolf may be persuaded to live on grass instead of devouring flesh, and that therefore proletariat must unite and prepare for a large deadly struggle with Imperialism.

In 1914 broke out German or the World War No. 1, which led to complete bankrupcy of Russian Monarchy, the latter supposing that the strength of the country lay entirely in the large well-trained armies and completely neglecting to pay any attention towards developing the internal resources of the State, its industries and its supplies. A complete disorganisation resulted, with consequently following Great October Revolution, inspired and led

October Revolution.

by genius of Vladimir Ilich Lenin, who by that time left his exile in Switzerland and crossed into Russia with his closest lieutenants including Trotsky and Stalin. Enthusiastically met by rebellious workers of Petrograd, Lenin made his dramatic way from the station on a tank-carrier into the Winter Palace, whereupon the rebellion set within the frame of carefully prepared plan of organised Revolutionary assault, resulting in glorious victory of working class and complete defeat of the Tzar's party, with dethronement of the Tzar, who some months later was deprived of his life, in consequence of various foreign plots to re-establish Russian Monarchy.

Germany watched this happenings in Russia with openly manifested satisfaction and according to some sources even helped some of the Russian Revolutionaries to cross well-guarded Russian frontier, as she was full of expectation that internal strife will weaken Russia and deviate her attention from War, which was taking for Germany quite sinister outlines of the quickly approaching defeat. And Russia was badly exhausted by Revolution and following Civil War, so that she was obliged to leave the task of defeats of Germany to her main Allies, France and England, who considered this attitude of Russia nothing short of a treachery. However, Lenin was firm, his convictions being that the Russians were not responsible for the campaign undertaken by Monarchy and that above all the remaining strength of the country and her people was all needed in the field of

constructive work, building new proletarian State of workers and peasants, scientists and intelligentia.

The general indignation of outside capitalist world expressed itself in series of interventions into Russian territory, German troops first occupying Ukraine, in expectation to find an active suport of White or Tzarist Russian party, who though badly defeated and broken yet strove to return to power. British armies followed in manyfold directions, the main forces in alliance with White Russian Generals Denikin, Vrangel, Udenich, Kolchak and others began their assault from the Black Sea, Baltic Sea and Arctic Ocean into Siberia. Here in India, a country that is easily led by miracles, it could not be explained otherwise than a miracle how a starving, badly equipped—sometimes only with axes—badly trained Red Army of Russian peasants, workers and partisans could fight with well-organised regular forces of France, England and Germany, fight so victoriously that whereas it took about six months for the foreign armies to reach nearly the gates of Moscow, it took them only about 3 weeks to make a hurried and miserable retreat across Ukrainian stepps and into the Black Sea, with the Red Army close at their heals, so that scarcely they could find time to make good their escape out of Russian territories, leaving lot of their armaments and equipment behind. Yet there is nothing of a miracle—there is only a proof of what waste resources of potential energy is hidden in the mass who may

Foreign interventions.

be awaken from their slumber for a just and great cause by the powerful voice of one who can boast himself of to be their destined leader, as Russia found by that time in Lenin.

And now time had come for Lenin to emerge as a Father of National Planned Economy, which out the chaos of destruction built a powerful prosperous Union of Soviet Russia. The details of Russian Five-year Plans are well-known and described by various distinguished authors and visitors to Russia, who invariably paid their tribute to the glowing "Valb of Ilich", which represents a duel symbol of universal literacy and country-wide Electrification. The system of well-harnessed rivers-rivers much similar and often less powerful than those of India, maintain this "Valb of Ilich" undyingly glowing and electricity, this "White horse of Industry" as used to say Lenin, proved to be a fortress of such potential strength as foundation of Industries, that over its granite, surer than over the steel bayonets of the armies, broke the super-human power of the Iron legions of Hitlerite Germany ; as by this time, remembering the lessons of the first defeat, Russian leadership at the footsteps of Lenin made it sure that a powerful backing of supply, industries and all internal resources will be available as staunch support to the armies, wrestling on the battle-field with the enemy.

Planned Economy.

The Sword of Stalingrad—a tribute from England—commemorates heroic courage and sacrifices that Russia has made in defeating Nazism, but the "Valb

Lenin in his study.

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of Ilich" illuminates the way towards reconstruction and revival out of ruins and destruction, and the pulse of Russia beats with the same undying enthusiasm, which makes her people to perform the miracles.

Lenin—the genuine leader is dead for over two long decades but the magnetism, the compelling power of his towering personality still leads forward. And if at any time of your life, you my kind friend and reader, will have the honour to stand in the long queue before the imposing monument of Lenin to have a glimpse at his dead but well-preserved and as if resting face and body—ask any Russian and he will reply you "With us Lenin is living for ever, who told you, Lenin could die ?"

Thus although Russia cannot boast of any wealth of her cultural heritage in the long centuries of the past, having risen out of perfect wilderness in comparatively recent time, having as well undergone the lengthy periods of humiliation and slavery under foreign domination and having resources not much surpassing those possessed by India—Russia certainly can boast of her wonderful achievements on the way of Modern progress—and there is no reason as to why India cannot do the same.

The well-conceived and properly carried into life Planned Economy, on the basis of all available resources of the country and with the application of sincere creative efforts of the entire populace, with the backing of wise propaganda, wide literacy and more or less equitable distribution of wealth—will assure for

India the same glorious victories on the way to progress and prosperity, as it has done in the case of Russia. The pre-requisite conditions being of course Nationalisation of all large public and Industrial Enterprises and Mineral Wealth, proper harnessing of the rivers etc. as well as re-modelling and re-setting of all existing industries on the basis of the latest modern technique, much in the way it has been done by Lenin who set Russian Industries both restored and the new ones on the 'White Horse' of Electricity in the course of his gigantic Gosplan.

Rightly adopted and wisely carried out, foreign policy, even if it marches by the way of temporary sacrifices, as was the case with Russia at the beginning of Soviet rule—is another key stone towards peaceful and planned development of a country, as at certain crucial periods of her existence a country can ill-afford to risk any internal strife, much less Foreign Wars; and if and when arisen it must be dealt with ruthless rapidity, as all her efforts are needed to be concentrated on her Economical progress and development—and India is essentially at such a crucial stage to-day.

Not always such a foregn policy invokes a gentle-man-like dealing with the arising problems, leader as great as Lenin being on more than one occasion accused of worst hypocricy. Indeed it was on personal persuation of Lenin that Social Democratic Party—that time in underground in Switzerland—after splitting into Mensheviks and Bolsheviks wings still preserved her integrity, and put joinet and whole-

hearted efforts into Revolutionary struggle in Russia, yet after final victory in the Great October Revolution, Menshevik's wing was condemned by Lenin's group to almost complete extermination. Similary, mobilising peasantry for the same Revolutionary struggle, Lenin did not hesitate, on the contrary, gave all encouragement towards preserving the integrity of the peasantry, including Middle and Rich peasantry in the form of the joint Front. Yet, after liquidation of Tzarist Government and zamidary rights, Rich peasants and even a part of Middle ones did not escape of being branded as "Kulaks" and deprived of not only their personal possessions, but also of their freedom and often of their lives.

Hypocritic as it seems and not always maintaining the personality of a leader in the halo of a Saint—it must be always remembered that a true National leader is he who, even by the way of commissions and ommissions, takes due care towards saving his Nation from avoidable sufferings and misery—leads his Nation towards happiness and welfare of the majority. And if and when a blunder committed by an average person may be simply called a mistake, a mistake of the leader to adopt strict and rightly choosen policy makes him a criminal before his entire Nation.

CHAPTER III

INVENTORS IN PLANNED ECONOMY

The civilization mankind attained to-day, to the level of culture it stands, combined with the amenities of life it gets—are the direct fruits of the INVENTIONS worked out generally by the poor struggling GENIUS of this world.

At the first step inventions such as that of Steam Engine by James Watt (1736-1819), Steam Turbine by Karl Gustav Laval (1745-1819), Oil Engine by Rudolf Diesel (1858-1913), together with the inventions in the other fields of human activities revolutionised the whole world's economy and culture. Next step, Thomas Addisson's Electric Lamp (1793-1860), Gugliemo Marconi's Wireless Telegraphy (1909), Aeroplane and Airvessel etc. along with the inventions in other branches of science and industry brought humanity to the present-day civilization and culture.

Invention as Torch-light to Civilization.

In the past, inventions and discoveries were done or rather happened by a mere chance. No systematic or organised research was carried on or thought of. With rapid development of science and technique at the present age, when Laissez-faire Policy proved failure it is essential that Researchs as well as Inventions must be co-ordinated with the frame of the National Planned Economy. Let us now have a review of the so-

called Planning in colonial countries and real Planning as exists in socialistic state. It has been already mentioned that the foundation of National Planning Committee in India was laid in 1938.

In imitation to this National Planning Committee, the Colonial Government of India had started some time back a new department called Planning and Development, which was disbanded later, on consideration that the functions of this department are completed. Notwithstanding this fact, we are tempted to point out that Planning is not a temporary job of finite character, it is an ever growing body in the development of a Nation. It is a continuous factor that requires direction and co-ordination according to the development and growth at each and every step. If its functions are discontinued all of a sudden, it tends to create rather an adverse effect than any benefit on the life and development of a Nation.

Planning in the hands of Colonial Government of India.

At the same time, Planning and practical realisation of what has been planned are two definitely different branches, although spreading from one and the same tree,—Planning is theoretical deliberations, while its realisation is materialism, a practical job. Karl Marx and Engels were philosophers and Lenin and Stalin are materialists and it is but through them that ideas of Marx and Engels have found their successful way in life, have been practically materialised. Thus the works and the methods of Planning and the methods

Planning and the Realisation of Plans as Two Different Branches.

and practical ways of realisation of what is planned are entirely different tasks. It is erroneous to think that those who can plan, can as well execute the planning, as so often happens in almost all Government Departments in India, where it is invariably supposed that an I. C. S. officer who can plan whatsoever is needed,—Industry, Agriculture, Education etc., can also run a turbine, operate a glass furnace, construct a gas retort etc. Actually this practice has resulted in catastrophes times without number. And if we would seek for an answer to the above mentioned problem we should rather turn to Soviet Russia, the first initiator and creator of a Planned Economy in the social life of a Nation.

"Gosplan" the Department of the National Planned Economy of Russia, created just after the Revolution and Civil War, is the first organisation of its kind. And it was in its fold that the joint effort of Politicians, Scientists and Technicians has evolved a huge plan of reconstruction and building of Modern Russia. The first effort in this way was fulfilled in three Five-year Plans. The first Five-year Plan, due to enthusiasm with which it was taken, was fulfilled in only four years' time. The author has a unique privilege of being recognised as one of those who took active part in ful-filling Five-year Plan in 4 years in Russia. The second Five-year Plan was fulfilled to the schedule. The tremendous capacity of Lenin's working genius is mainly responsible for the fulfilment of these Plans. Vividly expressing his

Soviet Planning.

cherished ideas Lenin wanted two bulbs to be lighted everywhere even to the remotest corner of Russia. The one—that of Electricity, the other—that of Education, commonly known in Russia as "the valve of Ilich" after Vladimir Ilich Lenin. The Electric power is the scale of modern civilisation of a nation and is measured by the killowatt per hour consumption per capita of a nation. And Education means Man-Making as expressed by the words of Swami Vivekananda. The combination of these two made modern Russia.

How electrification (the "white horse of Industry" according to Vladimir Ilich) and along with it the wide spreading of literacy the factors that played the principal part in fulfilling plans, have been carried out with such vivid and undaunted success?

Inventors in Nation-building.

The best and ablest workmanship and genius of the country were called upon to take active part in working out the plans. And not an insignificant role was played in this task by just an ordinary "gray" man of Russian remote villages and provincial towns—the humble inventor, whose potential abilities were before the Revolution so overshadowed by misery and oppression that he had ever such a little chance to come to the notice of the mighty authorities "above". By the initiative of Lenin the Central Committee of Inventors was established at Moscow. And at every factory, workshop, mine, hospital etc. a local organisation called "Invention and Rationalisation" was set in. Any person,

young or old, skilled or unskilled, educated or uneducated no matter, was welcome to submit his or her proposals for rationalisation and if rationalisation or invention were accepted 10 per cent of the annual profit from the proposal was awarded to the inventor, of course by the Government themselves. But even so, it was not an easy job to discover all these gems in the dust amidst the wreck of a country that was left into inheritance of Lenin's Government after the ravages of world war No. 1, and subsequent civil war and revolution. Much the same as India today is left after two hundred years of domination by colonial powers—suppressed, oppressed and ravaged both morally and materially. Special Government searching parties went far and wide throughout the Soviet Union in search of these hidden potential treasures, these humble inventors, whether mere youngsters or persons of age and experience and all facilities were being provided to assist further developing their talents and abilities, which subsequently were added to the man-resources of the country for its further prospects and glorification. When Lenin breathed his last, Stalin his able collaborator and successor, maintained this cherishing of common-man genius. And indeed remarkable are Stalin's words uttered in one of the Party conferences, that "we (i. e. Government) must cherish and grow every member of our great country with the same untiring care and attention with which a gardener is cherishing his plants in the Orchard".

The freely facilitated development of inventor's activities led to such an event as the birth of world-known and much celebrated Stakhanov's movement, whose influence upon the development of the country's Industries, Agriculture and almost every branch of social life assumed a proportion of such magnitude that will go down as a most glorified page in the history of the period. From its almost exclusively Industrial origin, the activities of the inventor spread rapidly over such departments as agriculture, chemical and technological processes, as well as social, political, organisational and administrative works, as for example, methods of liquidating of illiteracy, methods of co-ordination of prices between agricultural products and manufactured goods, collective farming, in imparting technical education, in preparing cadres, in utilising the services of foreign experts etc. etc.

Stakhanov's Movement in the U.S.S.R.

Thus in Russian experience, while fulfilling the two Five-year Plans, the vital role played by the inventors and the rationalisation workers in National Economy and Defence, was more than clearly manifested. The tremendous importance of inventors in the life and developments of a Nation will be further clear from a passage out of the book "Inventions, Patents and Trade Marks" by Milton Wright (McGraw-Hill Book Co.)—"The annual output of all the gold, silver and diamond mines in the world does not equal in value the yearly profits derived from American inventions." The writer himself is a member of the

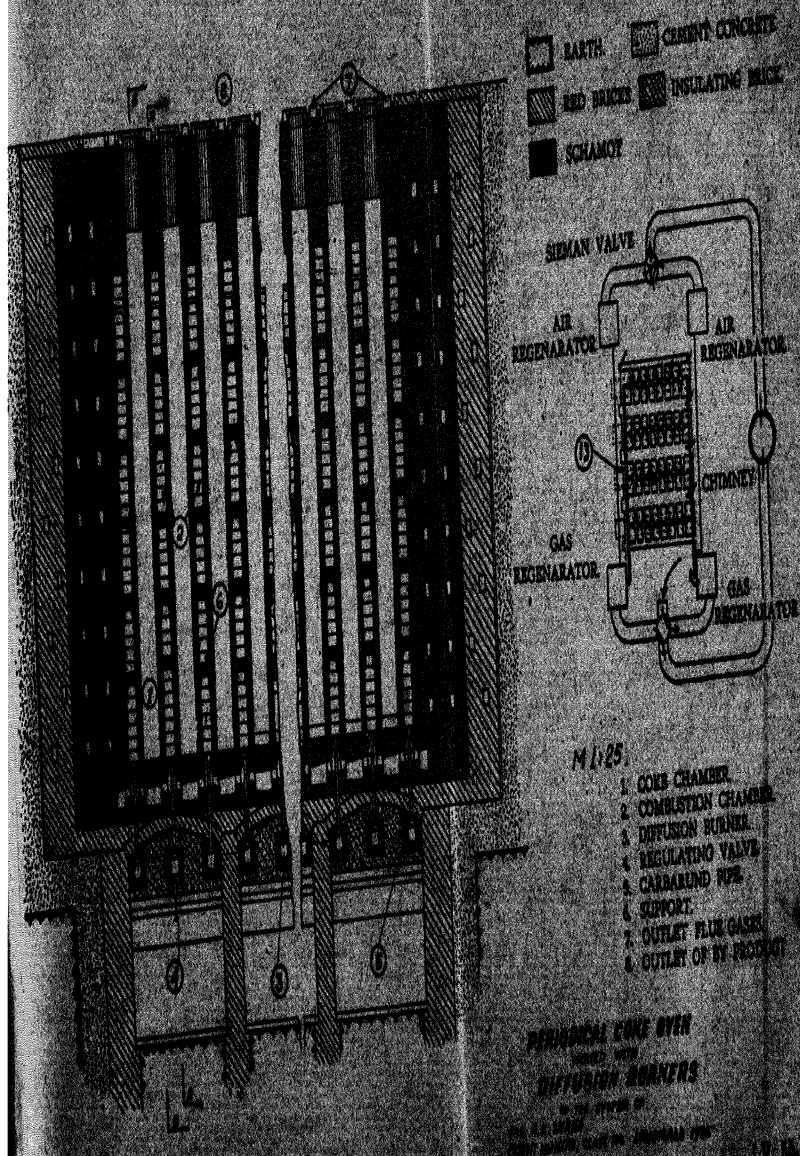
All-Union Association of Inventors of the U.S.S.R. and his membership card issued as early as 1936 bears a serial number as large as 1,85,586, showing as to what a large mass of the people have been drawn into the Association.

Inventions in Capitalist Countries.

In capitalist countries too a large and even desperate efforts are being applied for Invention and Research, but the primary object of these efforts are directed towards capturing foreign markets and economic domination over as large area as possible to bring under their influence. Secret research laboratories are being started almost in all countries and even instructions are being given to suitable Institutions in colonies to conduct research for the dominating countries, although very often the colony itself has nothing to do with the chosen subject. As for example, in India, the research on Diesel Engine, had nothing to do with the Indian interest, in the absence of a factory manufacturing these machines. The fruits of this research might have been of use only for the dominating country. The aggressive nature of invention under capitalism went so far as to lead to the second test of the Atom Bomb, when simultaneously a Peace Conference went side by side.

Organised Invention.

On the other hand, it may be stressed with regret that talent and genius are being wiped out from the colonies due to severe economic and social oppression. And it is superfluous to mention that without an opportunity being given

Industrial Coke-Oven offered by the author free to the Nation.

Industrial Coke-Oven offered by the author free to the Nation.

for the growth and development of talent and genius the true emancipation of a nation is practically out of reach.

At the present moment on the background of development of All-India National Planning Committee, together with the existence of the National Government, it would be in accordance with the urgent need of the day to wake up the dormant potential energy of India—her common-man genius and with this object the creation of Central National Inventors' Committee would come as a tremendous achievement.

The immediate concern of this Committee would be to revive the decaying talent of the country and to give proper lead and impetus to those of our countrymen who are possessing inborn abilities and inventive genius.

The object of such a Committee and Committees would be in outline :—

(1) To give scientific and technical advice to the inventors to materialise and put into definite shape their projects and inventions, i.e., to furnish theoretical and technical basis for their inventions.

(2) To offer to meritorious inventors all possible facilities to make model or sample of their invention, that would be found by the committee of any value for national uplift.

(3) To frame legislation regarding Patent Rights and Trade Marks both for the foreigners and for the children of the soil.

(4) To help the inventors to realise their inven-

tions commercially, i. e, to manufacture and market the articles of invention.

(5) The ideas and inventions, leading to fundamental research having any national importance, will be brought to the attention of suitable existing Research Institutes for further development.

(6) Legal advice will be given to the inventors for obtaining Patent Rights not only for India but also for the foreign countries.

(7) Special Attorneys of repute, experts in both foreign and Indian laws on Patent Rights and Trade Mark, will be invited to take active part in works of the committee to help in safeguarding the National interests as well as interests of every private Inventor. Of course such committees would maintain close co-ordination with national industries, agriculture, science and other important branches of national life.

(8) Confidential department for modifying and altering foreign Patents to suit Indian conditions and to secure Indian Patent Rights, thus cutting short the huge amount in Gold currency that drains away every year in paying royalty for foreign Patents and Designs.

CHAPTER IV

LIQUIDATION OF ILLITERACY

(By Mrs. Tatiana Shaha-Sedina)

Education ! I wonder whether every one of my kind readers can appreciate that a human being without education in its simplest form, i.e., without the knowledge of reading-writing, can be compared with a blind man, who moves by the direction of others, is compelled to obey the advice of others, and who, quite unwillingly may break in the course of his blind strolling the valuable things that may come across his way.

The Tragedy of Illiteracy.

Man without education—blind, subject to all kinds of fanaticism and superstition, which is not so easy for him to overcome, easily falling in with every advice, cruel and dangerous in his ignorance—may be pitied as the most unfortunate being, whose life, in the modern conditions, is unspeakably miserable.

And how many such unfortunate beings do we find in unhappy India ! In the backward countryside they are so many in number that it is a happy chance even for a male to be blessed even with the bare rudiments of education. Not to speak of females, who in general are oppressed all throughout their lives, first by their fathers, for whom they are rather articles of sale and benefit, then by their husbands, for whom they are convenient and cheap maid-servants, and lastly, by their own sons ! How happy is an Indian village

woman who can manage one day to find some kind-hearted man or a school-boy to write a letter to her relatives, to her mother ! And we are to remember that her old mother or young sister, receiving her letter will be quite in the dark about its contents, until somebody else will explain it to her. A daughter and a mother, and even a father and a son, living at a distance of only 15—20 miles, may not get news of each other even for a year.

And one will scarcely believe that only 25 years ago even the same picture could be visualised in Russia —in Tzarist Russia—when bourgeoisie was finding it not convenient for their purpose to impart mass education. "Divide and rule" was the slogan of Tzarism. It was convenient to divide and rule and to oppress the ignorant masses.

Russia uproots Illiteracy.

How then could Russia manage within wonderfully short period of time to attain such scoring success that 98% of her population is at present literate, while in the Tzarist period the average literacy both in rural and urban areas was scarcely above 33% ?

Edicts on compulsory primary education for the rural and the town population were issued shortly after the Revolution. Almost simultaneously was declared the full equalisation of rights and duties of Soviet women with those of men. "We are to bring our people to such a stage of development that even every housewife will know how to rule the country"

—said the great Russian revolutionary Lenin, "and we can make our young proletariane generation fully literate only when our mothers, sisters and daughters will be educated." Soviet Government have managed to awake the conscience and self-respect of the masses, and thus their will for receiving education. In what position Soviet Government had found people's education in Russia on assuming its power, will be clear from the following figures :—

In 1913 the budget of Tzarist Ministry of Education was fixed at 136,700,000 rubles. This means an average of less than 1 ruble per head. In neglected and oppressed regions of minorities the sanction amounted to only ¼ of a ruble per head. At the same time England and Belgium were spending 3 and 3·5 rubles per head, and America 9 rubles. Out of every thousand of inhabitants of Tzarist Russia less than 50 attended schools. Out of 22% of children population only 4·7% actually attended schools.

The Soviet Government thus faced great difficulties in the matter of mass education, as immediately after coming into existence, it had found almost all the proletarianes, almost the whole of the peasant class, fully illiterate. And time was not waiting ! The ever quick tempo of the reconstruction of the country in all branches, was demanding huge literate cadres, tremendous number of capable specialists. But knowledge, Science, Technique,—those golden

The Adult Illiteracy.

treasures of humanity—were mostly in the possession of the bourgeois elements. These elements could be utilised but could not be fully trusted. And Soviet Government wanted his own trusted, devoted, enthusiastic workers in all matters pertaining to reconstruction.

Thus the foremost and urgent problem which faced Soviet Government was liquidation of illiteracy amongst adults, who were already engaged in different Government enterprises and factories or who were to be called upon for immediate employment. This task was taken on a nation-wide scale. Interesting to cite here few words from the Memoirs of a Soviet Teacher of outstanding merit Mrs. O. Leonova, later Member of the Supreme Soviet of the U. S. S. R. :—

"In 1918 (in the year following Great October Revolution) I worked as a teacher among both children and adults. I shall never forget how persistently people strove to acquire knowledge and how great was their joy when, at the age of 30 or 40, they first learned to read and write."

The principal methods of liquidating illiteracy of labours and peasants, which were adopted in Russia and may be well applied in India to-day, are the following :—The organised labourers in the factories and workshops can be made literate within the course of three months if the Commissar or respective Minister of Public Education issues the order to the effect that every person working in the respective factories is to be made literate within specified period of time. The

When the child education starts, a five-year old Russian girl, concentrating on her first writing lesson. [P. 61.

Directors of factories whether private or State-owned are to pass orders to the headmen of the department to fulfil the task enforced by Commissar or the Minister. Now the headmen of the department should find out some convenient methods to fulfil the plan. The best way lies in awakening the sentiment of civic consciousness and healthy competition amongst the Captains or Chiefs of the different groups of workers. Subsequently these Captains can be expected to start immediately classes for liquidating illiteracy on the basis of Social Services. And the administration can propose to offer titles, Distinctions and awards to the best Captains. In similar way, in the villages, just like President or "Starosta" of the village Soviet in Russia, as well as the President of the Union and other influential persons in the village can be called upon to render every assistance to fulfil the task of spreading literacy amongst the adults of peasantry.

Child Illiteracy.

Simultaneously, when Soviet Government were fighting to liquidate illiteracy amongst adults, there arose the problem of introducing compulsory minimum education for children —the future cadres.

The first cycle of schools for the children of ages from eight to eleven years, for compulsory primary education, organised throughout the whole State, has made it possible for the Government to complete the task of compulsory literacy towards the end of 1932. In the cities it was completed in 1930-31. The first

Five-year Plan provided for the teaching of 18·2 million illiterates. Actually over 45 million people were drawn to the schools for weeding out illiteracy from the land. The plan in this respect was overfulfilled by two and a half times.

At the same time in all factories, shops, institutes, in all big houses of towns, in all distant villages, was organised a large net of special courses, reading-rooms, clubs, where with the help of special instructors, all adults, all government workers, whom revolution had found illiterate, were compelled to acquire literacy. All willing housewives were also welcomed to the same courses. In such a way, to the end of the first Five-year Plan the average literacy was reached to 90 p.c.

Special Measures.

Decisive progress of the country in all branches of her life led to the introduction of the Universal Seven-year Education. Accordingly, the second cycle of schools came into being.

The number of pupils in the three last school-grades (fifth, sixth and seventh), in the autumn of 1932, was 4·298 million against 1·216 million in 1927-28. The original plan was to provide for 1·843 million pupils in these grades in 1932-33. Thus, the complete fulfilment of the programme of introducing universal seven-year education has been ensured in the cities. In the whole of the U. S. S. R. the number of children in the seven-year schools comprised 67% of all children of the corresponding ages.

Since 1934, steps have been taken to carry out the

programme of the Party regarding the introduction of universal compulsory technical education for all children up to the age of seventeen years. A third cycle of schools is being organized.

On the whole, the number of children receiving universal elementary education has doubled during the Five-year Plan period, increasing from 11·2 million in 1927-28 to 24·1 million in 1932.

During the first Five-year Plan, great progress was made also in organizing the cadres of children of pre-school age. In 1932, the number of children in pre-school educational institutions was already 5·32 million, which comprised 33·7 p.c. of all Soviet children from three to seven years of age. This system has the additional benefit of making Soviet youngsters accustomed to strict Socialistic discipline from the very beginning of their conscious life.

Government care for children in their pre-school age has also rendered many of Soviet mothers free for devoting their valuable services for the constructive work of the country, free for participation in political, social and cultural life of the society.

On the whole, as the result of all these cultural enterprises, the U. S. S. R. is now occupying the first place in the world, so far as mass enlightenment and rudimental education is concerned. The number of

Education and Minorities.

books (separate titles), published in the beginning of the first Five-Year Plan period, was 34,200; at the end of the period—53,800. The entire book and magazine production

rose from 2·1 billion prints in 1928 to about 3·5 billion in 1932.

But Russia is a very large country, $\frac{1}{8}$ of the whole world, her population consists of many different nationalities,—speaking different languages, possessing different customs and culture or psychological make-up. In Tzarist time, when Russia was an indivisible empire, the great obstruction in the way of education even in the primary schools was the fact that only Russian was recognised as the state language, all other national tongues of the minorities being cast to the cold shade of neglect. Thus anyone, who desired to read in the schools, be he a Turk, Uzbek, Caucasian, or Ukrainian,—could read only in Russian, which to a large number of pupils was a foreign tongue (even so the Indian youths were being till recently compelled to study in English). All text books, magazines, newspapers were edited only in Russian. All Government offices worked in Russian and thus all Government employees were compelled to know Russian.

Russians were the supreme nation, ruling by military force and oppressing other minor nationalities. The great Russian revolutionary Vladimir Ilich Lenin, in creating the new Soviet rules after revolution, has declared for all minor nationalities free right to form their own Autonomous Republics and to develop freely their own national culture. Soviet Law has given to all National Republics free option to be incorporated or not into the Union of Soviet Socialistic Republics.

And now Soviet Union represents rather a willing

federation of several independent states—as Turkestan, Ukraine, White Russia, etc.—under the central guidance of the Communist Party. The vivid example of this changed policy is the fact that in the year 1928, Russian new Autonomous Republics were accorded large freedom as well as impetus for promoting not only primary but also higher education in their national tongues as well as to develop their intellectual life in their own languages. In 1928, the Newspapers were published in 48 languages and in 1931 in 63 languages. The proportion of books in the languages of the national minorities rose from 18·3 per cent of the whole number of published books in 1928 to 25·2 per cent in 1931.

Over 30 to 40 rubles per head is now being spent by Soviet Government for educational purposes in the regions of minorities. Also these regions which before Revolution had very few schools for mere primary education, now are boasting of possessing many higher educational institutions; as for example :—

Byelorussia which had no university before Revolution, now has 22; Azarbizan—13; Armenia—8; Uzbekistan—30; Turkmenistan—5; Kazakstan--19; Kirghizia—4; in Georgia, with only 1 university before Revolution—and the attendance of 300 students,—there are now 18 universities in which 21,800 students are receiving their education. Ukraine, after Russia proper, the biggest and the favoured minority province—had 15 universities in Tzarist

time and now there are 139 higher educational institutions.

Nationalities which before Revolution had no alphabets of their own, had been made to adopt Latin alphabets for written expression of their tongue.

The Unique Achievement.

In completion with the law on compulsory primary education, all children in National Republics, as in the U. S. S. R. itself, are attending elementary schools free of charge. In higher educational institutions within the territory of the U. S. S. R., the majority of students are provided with stipend as well as living quarters. The studies are conducted in native tongue. Of the general progress of education in Soviet Russia one can judge by the number of school children and students, as well as by data on expenditure for people's education, which towards 1937 amounted to 6,179 million rubles for school requirements. In 1914, there were merely 8,137,000 school children and student in pre-Soviet Russia, while towards 1939 in Soviet Russia this number increased to 47,442,100. In 1914, there were only 995,000 children attending secondary schools and in 1939 this number (both in general and special secondary schools) increased to 12,076,000. In 1914 there were only 112,000 students in universities and colleges of Tzarist Russia, whereas now there are over 650,000. In about 25 years of her existence Soviet Russia had built more schools and colleges than Tzarist Regime in 200 years, when

it was considered, as in India till very recently, that education is neither for the poor nor for a layman. Indeed Tzarist Government used to place lot of hindrance to worker's and peasant's children to prevent them from entering the institutions of higher education which were irrevocably considered to be the abode of only privileged.

Also an immense change has occurred in the position of a people's teacher. Before Revolution teacher used to be neglected, half starving and of no significance at all, now in Soviet Russia teacher is an important factor in the country's cultural development and as such his pay and other privileges are affording him dignified and decent standard of existence. Many a teacher, both men and women, are being elected into the Supreme Soviet of the U. S. S. R. from all parts of Soviet Union and the National Republics.

As a result of all these educational measures, Soviet intellectuals or intelligentia have grown to comprise 14% of the whole population of the U. S. S. R.

At present, Russia is not an indivisible empire in which all the nationalities are divided by artificially created differences. But it is a powerful federation of the new Soviet State, where all nationalities having right to retain their national peculiarities, are at the same time united in order to render their common efforts for building up their common motherland.

And such unification we would heartily desire for India :

1. Unification based on freedom.
2. Unification based on brotherhood.
3. Unification based on culture.
4. Unification based on wealth and happiness of each and every individual.

CHAPTER V

THE PROBLEM OF INDUSTRIALISATION OF INDIA

To make industrialisation a live issue vitally affecting the destinies of four hundred million souls, what the country requires is not mere tinkering with the problem, mere approach to this or that aspect of the question but going to the very root of it. That is possible only when we are accustomed to think in terms of starting Mother Industry (Heavy Industry)—Light Industry and Cottage Industry will be her natural issues.

Introduction.

Thus the problem of saving the country from foreign imports and unemployment will be solved simultaneously.

Now in the days of industrial awakening and in the period of transition utmost cautions and consciousness are required to adopt and to preach the methods and policies for the industrialisation of our country. We must study the past, the present as well as the methods applied in the advanced countries, especially the wonderfully speedy method adopted in Soviet Russia.

In these days we see only enthusiasts putting forward their ideas in bombastically worded articles,

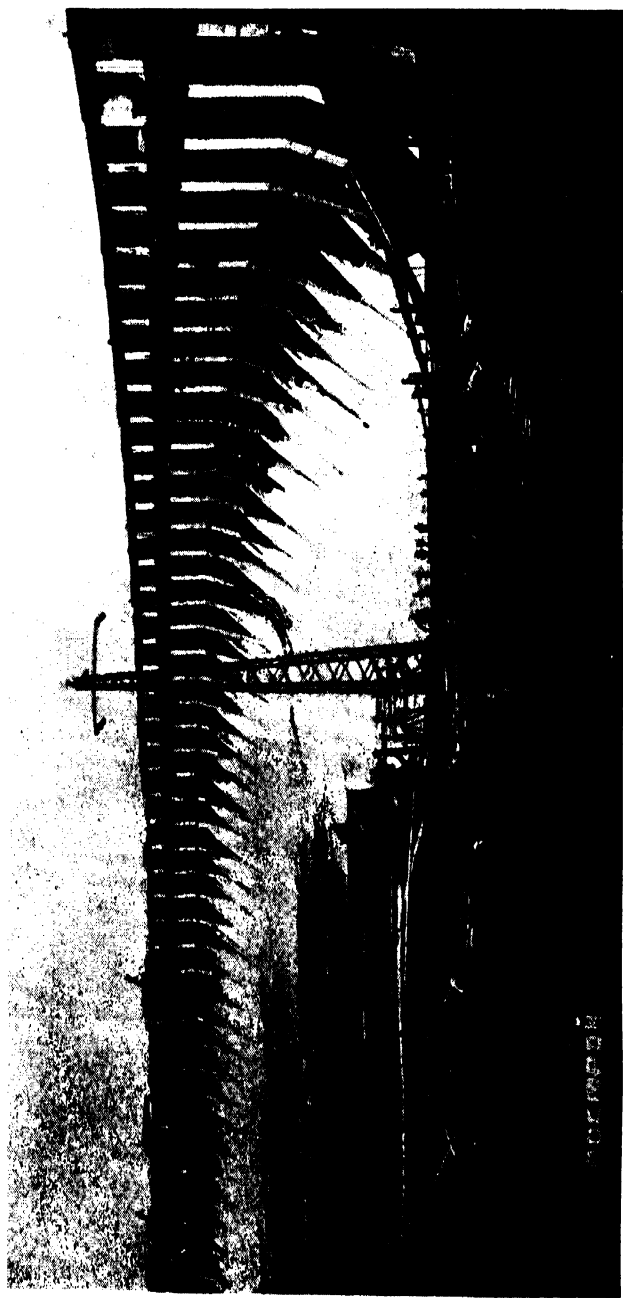
huge reports and schemes, and many bulky volumes on industrial recovery of India. The central idea running through all these is the same—counting on every branch, leaf, bud, etc., etc., but excluding the vital item, the tree itself and its root.

Position of Industry and the Policy adopted.

Some of our more advanced enthusiasts propose to start a particular huge industry, such as locomotive, turbo-generator or automobile industries with foreign machineries, and under the direct supervision and control of foreign experts at the start, of course keeping some sort of provision for these factories to train Indians for running the factories, but not for erecting a second or a third factory. Such kinds of proposals remind me of the old village oil mills run by bullocks. After the start of the mill, the only thing necessary for the owner is to shut the eyes of the operator—the bullock.

Invited experts should work under the guidance of our organisers. Experts should take the noble task of training our young people, avoiding the simple job of shutting their eyes.

If one thoroughly studies those articles, schemes etc., and the practical methods that have been adopted till now, it will be clear that there remains scarcely any difference in situation from moral or economic point of view if these goods be imported into India from foreign countries or similar goods manufactured in India by imported machineries, erected and

Misconception of Foreign Goods.

Dnieper Dam, the second largest Hydro-Electric Station of the world, destroyed **by Russians in 1944,** to prevent its fall into the hands of advancing Germans. Its reconstruction already begun.

[P. 70

maintained by foreign experts and often too with foreign capital. What then is the meaning of an agitation for boycotting foreign goods and maintaining the idea of purchasing foreign machineries ? It means either way sending out of India a huge sum of money and engaging foreign engineers brought in along with machineries and maintaining the industries only by exploiting our black workers (black workers mean those who sell their physical labour—a literal translation of the Russian word) and peasants. The machineries require extra parts every now and then to be supplied by the foreign company from which the machineries are bought, and the company is in a position to extort any price for the spare parts. Thus selling a plant, the company practically buys a Zemindary.

Struggle of Our Industrialists.

For example, let us take the case of a certain Indian company formed with the object of establishing one sugar mill of 1,000 ton crushing capacity per day. Many foreign firms will submit quotations, the lowest of which is say Rs. 13,00,000 without freight, custom duty etc., and in addition to that the firm will bind the mill to employ three or four of their experts at say Rs. 2,000/- or more per month for a considerable period. And now the mill starts working. What can be expected then ? Does the profit comes to-morrow ? Certainly not. Firstly, the company will try to pay as miserable salaries as possible to the Indian workers, and secondly, to buy the necessary raw materials from

the peasants as cheaply as they can, citing the name of the Almighty against compulsory or forced purchase. In this way they will struggle with the workers, peasants and machineries with ever-necessary repairs and supply of the spare parts, and in the long run in a few cases such indigenous mill will somehow maintain her existence, and in majority of cases will prove failure with their costly machineries ultimately going to the scrap-iron dealers.

Many cottage industries and light industries do not require complicated machineries, but still we find them depending on imported raw materials, and intermediates. For example, soap works, glass factories, paper mills etc. require soda compounds which are imported to India. Rubber industry uses foreign magnesium carbonate. Similar is the case with textile mills. All dye-stuffs are imported from outside,—even in some cases yarns too. Example may be multiplied. It is needless to say that all the natural resources from which the above mentioned base chemicals are produced are abundant in our country.

Why then we so hopelessly depend on foreign import ? This is the result of hap-hazard and illusive methods of so-called industrialisation of our country. Where is the secret ? Secret is that we must have iron discipline, strong organisation and thoughtfully worked out All-India Plan of Industrialisation. This plan will find out the root and not bother with the leaves and branches. It starts

Foreign Import and the Origin of the Idea of starting Industry at random.

with the mother industry on the basis of natural resources and national working hands and brains in order to arrive towards industrial and technical independence.

The underlying principle of establishing industries at random is that the owner or the company judges about the possibility of gain at a particular time and in a particular industry, being quite unconscious about the broad fact that this gain is not independent, but is a function of mother or base industry which controls the industry in question.

What is the relation of heavy or mother industry to cottage industry and light industry? Plainly speaking, the relation is that of the mother to her children—the root of a tree to its branches, leaves and fruits. If we look around, we see the light industries, i.e., Sugar mills, Rice mills, Textile mills, Soap factories, Leather industry, etc., and we find that producing machineries consist of Turbines, Engines, Boilers, Motors, Retorts, Cutters, Mixers, Burners, Grinders, Furnaces, etc., etc., which are mostly made of iron, steel, brick etc. Here we have our Tatas and Indian Iron and Steel Company, and many other smaller firms (Production of pig iron in India during 1928-32 is 55·7 lakhs of tons). Why do we not avail ourselves of the opportunity of getting the above machineries and equipments constructed by the said firms? And why not to start more concerns like Tatas? Tatas works are firmly established

Mother Industry and its Relation to Light Industry.

already several dacades ago. The materials requisite for the construction of machineries needed for our national industries are firstly properly treated iron and steel, secondly the knowledge of theory and the estimation of the dimensions of the details and parts of the machineries, viz., length, breadth, thickness, diameter etc. And very often we can simply copy foreign machineries as the Patents of those expired already. For example, while establishing Hydro-electric stations, only one unit of Turbo-generator can be imported and others made locally. This will save crores of rupees in gold value.

Heavy Industry and its Reaction on National Economy.

We have a good number of unemployed people, the potential brain and working hands of the country, who are rotting unutilised. To-day we are in a position to start a second Tata, and a 3rd, 4th, 5th—10th even 20th i.e., Metallurigical, Machine building, and Chemical Plants, each one of which can absorb 25,000 to 50,000 workers, both skilled and unskilled. How this miracle is possible, the solution is very simple. The method is quite diverse, nay a Revolution—industrial and scientific. To stop the pseudo, hap-hazard industrialisation of India, i.e., to stop the traditional deceptive and illusive method of industrialisation for say one year's period.

This means saving of crores of rupees. One example is sufficient. Import of iron and steel goods during the years 1929-32 amounts to Rs. 148 crores (weight 25 lakhs of tons). If a portion of this

capital be invested in India, huge mother industries can be started even to-morrow.

A short note on the two schemes worked out by the engineering industries and transport industries sub-committee of N. P. C. will convince the reader of the practical possibility of standing on our own foot regarding *Machineries* and *Capital* goods. This sub-committee consists of Engineers, Industrialists and Economists who received their training and practical experience in America, Germany, England and Soviet Russia as will be seen from the list of the members given bellow :—

Engineering Industries and Transport Industries Sub-Committee.

Chairman :—

1. Shri P. N. Mathur, Supdt. Duplex Plant (deceased). Tata Iron & Steel.

Secretary :—

2. The Hon. Mr. M. N. Dalal, 41, Cuffe Parade, Colaba, Bombay.

Members :—

3. Shri Maurice Frydman, Consulting Engineer, Aundh State, Sevagram, Wardha.
4. Prof. A. K. Shaha, 4, Ganesh Avenue, Calcutta.
5. Rao Bahadur G. Nagaratanam Iyer, Governing Director, The Industrial Engineers & Merchants Ltd , Bezwada.
6. Shri B. Vishwanath, B. E., General Manager, The Mysore Iron & Steel Works, Bhadrawati.
7. Dr. A. Pandya, D. Sc., Principal, B. E. College, Shivpur, Calcutta.
8. The Hon. Shaib Qureshi, Minister, Bhopal State.
9. Shri M. C. Ghia, M. L. A., 28, Apollo Street, Bombay.
10. Shri S. L. Kirloskar, Kirloskarwadi, Dt. Satara.
11. Shri Dhanpal Chandra, Principal, Government Technical Institute, Lucknow.
12. Shri Ratanchand-Hirachand, Indian Hume Pipe Co., Construction House, Bombay.

13. Prof. R. S. Jain, Benares Hindu University, Benares.
14. Dr. J. N. Basu, Prof. of Mechanical Engineering, College of Engineering & Technology, Jadavpore, Calcutta.
15. Shri N. N. Rakshit, Director, Tatanagar Foundry. Mysore-Govt. Rep :—
16. Shri M. Venketesh, Loco & Carr. Superintendent, Mysore (Delegate of the Labour Sub-Committee).
17. Shri V. R. Kalappa, 44, Kingsway, Nagpur.
18. Prof. K. T. Shah, Hon. Gen. Secy., N. P. C., Bombay University.

(A) Approximate cost of machinery and equipment involved in the manufacture of motor cars and allied light mechanical machinery.

Annual import of items under reference in lakhs of rupees for the year 1936-37.

1.	Motor cars and Taxi cabs	243·0
2.	Parts	74·0
3.	Chassis	118·0
4.	Motor Vans, Lorries and Omnibuses	13·0
5.	Tractors and ploughs	12·0
6.	Cycles and parts	11·2
7.	Motor Cycles	3·5
8.	Ship-parts, launches and boats	4·0
9.	Cotton mill machinery	180·0
10.	Jute mill machinery	74·0
11.	Woollen mill machinery	16·0
12.	Light Engines and parts (approx.)	40·0
13.	Aircraft and parts	16·0
	Total annual import Rs.	804·7

Capital outlay for the establishment of a workshop to manufacture the above mentioned imported machineries.

		Rs. in lakhs.
I.	Land building and quarters	14
II.	Power Station and Distributions	4

Item	
III. Main Production Departments (Motor)	
1. Foundries :—	
(*a*) Cast iron	5
(*b*) Non-Ferrous alloys	1
2. Forgings and springs manufacture	5
3. Heat Treat	2
4. Machine shop	20
5. Pressed steel	25
6. Assembly and Testing	20
IV. Non-production departments for automobile as well as parts of other machinery under reference.	
1. Control and metallurgical laboratory	2
2. Timber yard, carpenter shop, pattern shop and vault	4
3. Foundry :—	
(1) Cast iron	8
(2) Permanent mould	2
(3) Steel	2
(4) Malleable cast iron	3
(5) Non-Ferrous alloys	1
(6) Die casting	2
4. Blacksmith shop	8
5. Tool room and die department including Head Treatment	6
6. Structural shop cutting and welding and pipe	40
7. Transportation Facilities	4
8. Alloy and steel melting and casting equipment	4
9. Rolling Mill equipment	14
10. Machinery equipment or furniture for miscellaneous departments such as general office, drafting room, engineering, first aid, paint shop, steam and air, chemical laboratory, rubber and bokalite battery manufacture (if necessary), electroplating, scrap and salvage, employment, shipping, sales etc.	15
11. Miscellaneous	9
12. Working Capital	80
Total in lakhs of Rs.	300

N. B. 1. The scheme includes the cost of cranes and conveyors.

2. Cost figures are purposely kept on the high side.

(B) Approximate cost of machinery and equipment involved in the manufacture of heavy machanical machinery on an All-India basis in a national workshop.

Import of items under reference during the year 1936-37 in lakhs of rupees.

1.	Metal working machinery including Machine tools and others	30·0
2.	Railway Locomotives	76.0
3.	Other Locomotives	13·5
4.	Heavy Engines	43·0
5.	Railway carriages, wagons and parts	65·0
6.	Boilers	87·0
7.	Mining	73·5
8.	Oil crushing and refining	27·5
9.	Paper Mill	7·8
10.	Pumping	30·5
11.	Rice and Flour Mill	71·0
12.	Saw mill and wood working	45·2
13.	Sugar Machinery	95·1
14.	Tea	14·7
15.	Printing and Lithographic presses	18·2
	Total lakhs of Rs.	698·0

Capital outlay in lakhs of rupees, for constructing a national workshop to supply the country's need with the above list of heavy machineries.

I.	Land, Building and Quarters	30
II.	Power House	50
III.	Control and Research Laboratory	4
IV.	Pattern shop and Vault	4
V.	Foundry :—	
	Cast Iron	8
	Steel (acid) ingots and castings	4
	Non-ferrous alloys	1
VI.	Blacksmith Shop (Heavy Forgings)	10
VII.	Tool and die Dept. including Heat Treatment	6

VIII.	Structural shop including cutting and welding	10
IX.	Machine shop (complete)	50
X.	Seamless Tube Mill	30
XI.	Inspection Department	4
XII.	Transportation Facilities	8
XIII.	Machinery, equipment or furniture for miscellaneous departments such as general office, engineering office, drafting room, first aid, electro-plating, shipping, steam, oxygen, water and air supply	20
XIV.	Working Capital	80
	Total in lakhs of Rs.	319

HEAVY AND LIGHT MECHANICAL INDUSTRIES

A general idea of machinery and equipment required.

1. *Cutting and Welding Sections & Structural Shop.*

Building
Welding Equipment
Cutting Machine
2 Saws—36″ & 42″.
Radial Drilling Machine.
6 Shearing & Punching Machine.
2 Plate Bending Machine.
2 Electric Rivet Heating Machines.
Compressed Air Equipment.
3 Cranes—10- Ton
an4
2 Cranes—20- Ton each.

For the Light Industries, Number and Capacity of the overhead Cranes can be considerably reduced.

2. *Blacksmith Shop.*

1.	1,000- Ton Press	1
2.	3- Ton Crane Manupulator.	1
3.	2- Ton Steam Hammers.	3
4.	1- Ton. „ „	2
	80-lb. Cushioned Bradley Hammer.	1
5.	Electric Welders.	2

6. Acetylene Burner. 1
7. Forges & Anvils. 12
8. Ingot Heating Furnace. 1
9. Furnace for heating stock. 1
10. Car Type Furnace Capable of heating up 25- Ton Forgings provided with Oil Circulating Pit. } 1
11. Oil and Water Tanks for Quenching.
12. Newton Saw 16″ Wheel. 1
13. Double Grinding Machines. 2
14. Drilling Machine (Radial). 1

3. *Pattern Shop.*

1. Two Drilling Machines—Vertical.
2. One Drilling Machine—Horizontal.
3. Planing Machine.
4. Surfacing only 18″ cutter.
5. Thicknessing only 24″ cutter.
6. Combined Surfacing and Thicknessing—24″ cutter.
7. Lathe 3′-6″ Centre.
8. „ 2′ centre × 12′ Bed.
9. „ 9″ centre × 6′ „
10. Two Jointers 6″ Cuttres.
11. Cricular Saw 30″ dia.
12. „ „ 27″ „
13. Band Saw 3″ diameter.
14. „ „ 2′-5″ & 3′-5″ dia.
15. Wood Trimmer.
16. Grinding Stone 2′-6″.
17. Wood Milling Machine.
18. Sand Paper Machine.
19. Steam Driven Log Sawing Machine. Capacity 3′ × 2′ long.
20. Circular Saw 3′ dia.
21. Circular Saw 2′ „

4. *Cast Iron, Steel, Brass and Malleable Jobbing Foundry.*

1. Cupolas 72″ shell. 2
2. Blowers to suit. 2
3. Core Ovens.
   Car Type 12′ × 16′ × 9′ 1

	Drawers Type.	3
	Five-Ton with independent portable core racks	1
4.	Five-Ton Elevator for cupolas.	1
5.	30″ Grinders.	2
6.	Five-Ton scale.	1
7.	Barrel Trucks.	2
8.	Cargo Trucks.	2
9.	Wheel Barrows.	20
10.	Tumbler.	1
11.	5-Ton Electric Furnace.	
12.	2 Mould Drying Ovens—Car Type.	
13.	2 Annealing Furnaces—Car Type.	
14.	50-Ton Cranes.	2
15.	15-Ton „	2
16.	12 Crucible holes provided with Stack.	
17.	Cupola Tools.	
18.	Melting Furnace 1-Ton charge. (Malleable Iron). (White Cast Iron).	
19.	Annealing Furnace.—Capacity 3-Ton Castings.	

(5) *Metallurgical, Control and Testing Department.*

(1) Hoskins Hair Pin Type. Resistance Furnace.
(2) Leeds and Northrup Thermal Curve Automatic Recorder.
(3) Combined Polishing and Grinding Wheel.
(4) 3-Oil Tanks and
2-Water Tanks.
(5) 2-Furnaces for Tool Steel and High Speed Steel.
(6) Cyanide Pot.
(7) Lead Pot.
(8) Nitrate Bath.
(9) Hoskins High Temperature for Melting Ferrous and Non-Ferrous alloys in about 20-lb. lots.
(10) Brinell Machine.
(11) Olsen Testing Machine.
(12) Olsen Tortion Machine.
(13) Charpy Impact Test Machine.
(14) Tracture Machine.
(15) Lathe.

(16) Drill Press.
(17) Grinder.
(18) Polishing Machine.
(19) Microscope.

We see from experience of the last few decades that our country-men are so persevering and patient that they can wait decades after investing their huge capital in foreign machineries and employing foreign experts in order to gain something from them by manufacturing different articles of consumption. Well, then why they will not wait one year simply to see how their own country-men work and produce machineries more suitable to the country, according to their particular needs and choice. Our people will certainly be glad to invest their capital for such a noble cause, and their money will be returned in multiple, while at the same time our country will be saved from unemployment, with consequent misery, nay constant famine, death, destruction and chaos. Only it is necessary to put forward a concrete plan and to convince our National Government and our industrialists as well of the revolutionising effect to their entire benefit. The country needs only to work collectively in an organised way with unity and faith as watchwords. I believe within a single day huge capital can be gathered for this honest purpose, neither the instances of such a huge collection in a marvellously short time are new in our country. When the capital is at our disposal, the only thing to do is to mobilise and direct properly the potential energy of our educated youths, giving them a short period of

Method suggested.

training during their employment. This is a practical suggestion to arrest huge drainage of country's wealth after foreign machineries and foreign experts with simultaneous liquidation of unemployment.

The Potential Brain Power of Our Country and the Possibility of its Dynamic Action.

Here one vital point must be made clear—the potential power of our unemployed mass. I understand and feel that our country has very little or no knowledge of the dynamic power of its huge mass, sleeping leviathan—neither in their physical nor brain power. This is why up to this time they are left aside and our huge capital is being drained away to foreign countries. I am sure that this huge unemployed mass are themselves aware of their potentiality. A lump of iron left on the ground to rust has not the power to think that properly treated it can produce marvels—swords, air-planes, rockets etc. Similar is the case with our unemployed mass. Here I shall cite concrete examples from my own experience in the U.S.S.R. Even the bitterest enemy of the Soviet Union cannot deny that to-day she is one of the foremost powers of the world, and many of the Soviet citizens who are heroes of the U.S.S.R. are recognised by Europe and America. All the factories and workshops of Soviet Russia are now running under the guidance of her own people, out of the mass of ordinary peasantry and labourers, whom proper education and right political guidance have brought to the topmost ranks of expert technicians and even political administrators. I have had a privilege during my

long work and stay in the U.S.S.R. comprising a period of 12 years—to come into direct and close contact with many such Russian workers, now expert technicians, professors, artists, writers, etc., men and women, young and old—and it is with special pleasure that I can bring to my Indian readers the names of such outstanding heroes as Dr. U. Smith, an ordinary professor of Mathematics, now of popular fame, or the names of Comrades Tchuknovskee and Vodopianov—sons of peasant, ordinary motor drivers, now-a-days renowned pilots and explorers of international fame, or Comrade Stackanov—an unskilled miner, who by dint of his inborn genius had discovered and later on perfected and developed with Government assistance his wonderful method of extraction double the amount of coal within one shift—methods now largely employed throughout the U.S.S.R. The examples are numerous and it would take pages to cite all of them. These are written on the glorious achievements of the U.S.S.R. and with such examples before us we need not be in the least doubt about the success of our own people. Only they must be recruited and properly guided, all of them, men and women alike, excluding only youngsters and children, as it is on the broad masses alone that rests the future destiny of our country.

What key industries provide for the country? Practically they provide everything. First we can get cheap power-electricity from water current (ours is a land of rivers) using our own turbines, the alternative

A portion of the Agricultural Machine Construction Factory, Rostov-on-Don, 1932, when the author invented his Soviet Gas-Burner. [P. 84.

way is power from steam raising by using our boilers and turbines combined. There we get the chief power for our small scale and cottage industries and also for our agriculture. By the combination of these we can construct and run sugar mills, textile mills, heavy chemical factories, etc., etc. Thus we can make the country free from exported machineries and appliances for our subsidiary industries.

The Immense Possibilities of Key Industries.

Our country is scarcely benefited by the traditional custom of importing machineries and foreign experts, which result in drainage of crores of rupees every year. The factories they established can keep running only because the private owners can mercilessly exploit the labour of our workers and peasants. The ultimate result is that our educated class remains unemployed and ignorant about industry and technic, and the black workers are thrown away without food and clothing. Tatas every year exports huge quantities of pig iron. Export of pig iron during 1929-32 is 19,88 lakhs of tons, and in return we got machineries imported into our country at a cost thousand times the selling price. This is the position to-day. So the first step which our country should take is to up-root this traditional custom and to start *machine construction industry*. With this object in view we should immediately organise a number of projecting bureaus, some connected with Tatas or Indian Iron and Steel Co., or the like, owning mechanical workshops, foundries etc., and others

independent of starting new metallurgical and heavy chemical plants.

And in the mean time, we are to change the programme and mentality of our technical students. Rather we must upset the present system of education, which is mere waste of time, energy and life in the world of imagination. We must revolutionise the existing methods, we must come down to the real world, the practical field. The educational institutions which started themselves isolated, without keeping harmony with the practical life, to furnish young people with vain intoxicating degrees must be shut up. Instead the industrial concerns and social organs must be advised to start educational institutions according to their corresponding needs.

The Aspect of Education and the Mentality of Our People.

Our educated people should not aimlessly and hopelessly run after some sort of jobs not realising what they have learnt for, and where lies the field for the application of their knowledge. While studying, they do not even think of their future, they study for the sake of study, for degree, empty honours and name. On the contrary our educated people will be imediately recruited to the practical field by our different industrial organs and different concerns. These organisations will control the educational institutions and give them definite and concrete programmes which are needed for life and culture. Thus education with its definite programmes and future hopes will be vivid to the enthusiastic

students with definite aims, clear ideas and bright prospects. Numerous fields will be opened before the trainees to choose according to their inclination and ability. We should neither teach them here nor send them abroad to become canvassers of a particular firm for particular machinery, as has often been the case till now.

Everybody knows that in Europe and America there are some scholarships reserved for Indian students. Our Indian illusionists believe that this is very generous act on the part of foreign countries. But in reality this is not the case. Our young students go to foreign countries, learn there a particular process of manufacturing, say needles, shoes, blades, threads, soaps, nibs, cigarettes, knives, cloths, pencils, etc., and very soon are furnished with some high-sounding degrees, most coveted of all earthly possessions by the young trainees. But what the student is to do with the degree ? If he likes to earn his living, he must buy or act as an Agent for foreign machineries to repay his petty scholarship (if he had the chance to get it at all). Lakhs of rupees worth of machineries required to manufacture any of the above articles, will subsequently be extracted from him and from his wretched country. Very few of our students can afford to spend this huge sum ; so the majority of our foreign trained experts remain dissatisfied and idle.

The Planless Foreign Education and its after effect.

We are to impart training to our youths in such a way as to make them fit to project, construct and

build machineries themselves. Certainly we shall send our young people abroad, but with a definite plan and programme, and with a preliminary guidance by our leaders as to what is our urgent necessity. We shall invite, and not hire, foreign experts, not with the view only of importing foreign machineries, assembling the same and erecting factories as is the general custom, whereas natives are not even allowed to be present at the place of erection—a broad-day fact that causes not only economical but shameless demoralising effect on the full patronage of our own factory owners and the importers of machineries.

How to train Our Youths; the Soviet examples.

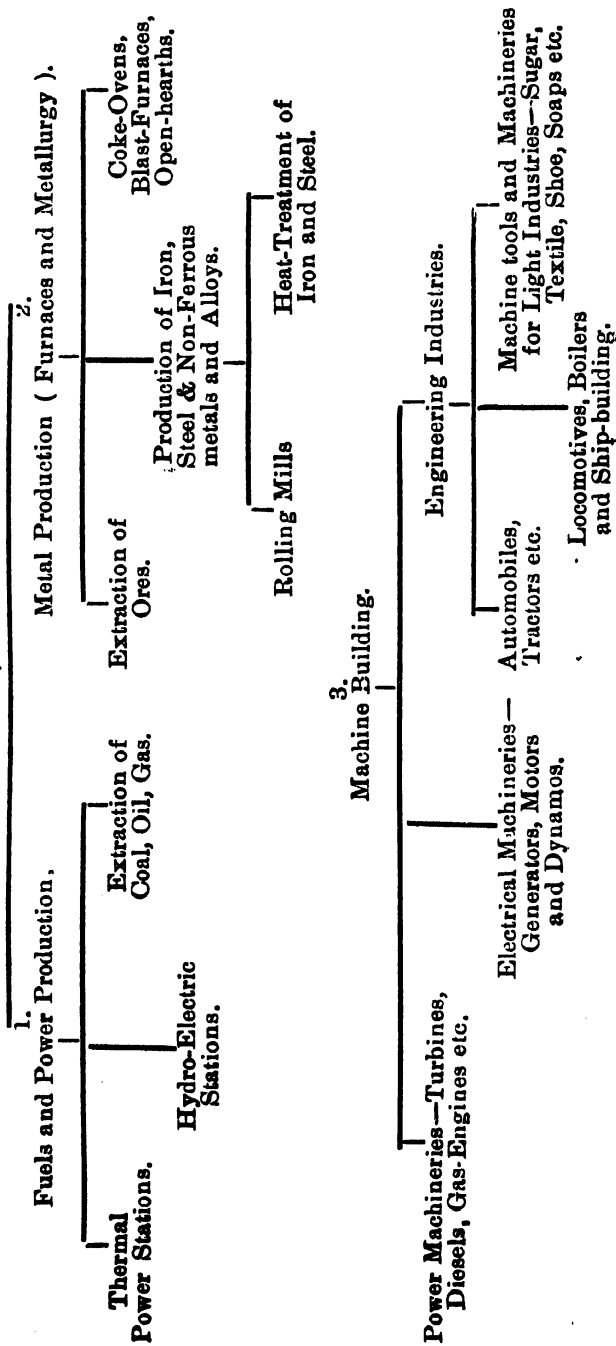
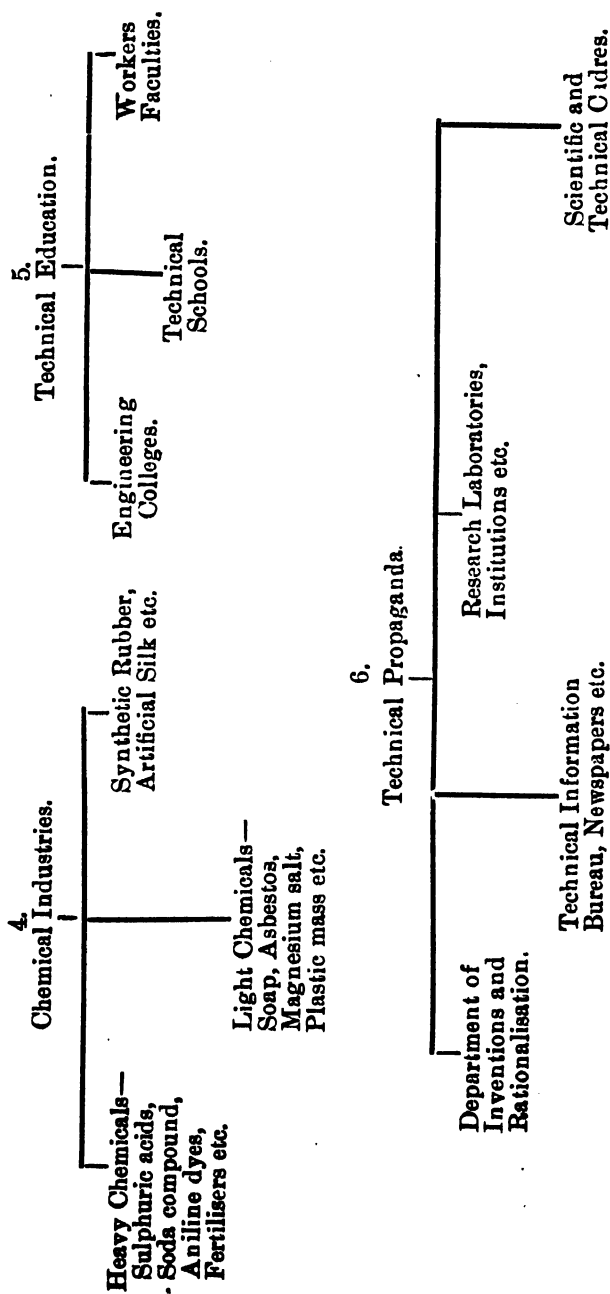
Here, however, it is not my object to abuse either any factory owner, or the foreign experts. Our factory owners are not technicians and in many cases unforunately not organisers too, so they are obliged to obey the directions of the foreign Company who in order to keep their monopoly, introduce this policy. But why should we be in the darkness? Why should we not make the matter clear to the eyes of our public. And then why to invite foreigners? To invite them so that each foreign expert should train a number of our young people so that after a short period they can themselves construct, assemble and erect factories. This is what we want and this is why we should spend our money in inviting foreign experts. This is what Soviet Russia did. Look at her to-day and compare her with what she was twenty years back and compare our condition with hers.

It may be mentioned here that the number of students in the combined universities and high schools of Britain, Germany, Italy, France, Japan is just over 4,00,000. The number of them in the Soviet Union is 5,50,000. But in Soviet Union there is none unemployed, nay there exist many vacancies.

To train young people in technique and industry and make a backward nation technical minded, it is urgently necessary to have proper technical literature in mother language, or at least in English which is the most common in India and is the most scientific language. Here a sad fact may be mentioned that the foreign technical books which we mostly have, are meant to philosophise, theorise, shut the eyes of our young people and not to train them. You can turn over the pages of thousands of books of any particular industry, say glass, gas, coke or the like, you will find nowhere any particular information in definite arithmetical figures on the basis of which you can do any practical work, as we find it in Soviet Russia, because so many of technical problems and devises are the commercial secrets of the foreign countries. This real literature should be such that studying it one will be able to project, construct and build a factory or machinery for a particular industry. We are to open the secret of technique and industry and write books in black and white without any diplomacy so that they may be of real use to the country and to the human race in general. Here a broad appeal may not

Nature of Technical Books.

Chart No. II. *

ALL-INDIA PLAN OF INDUSTRIALISATION.

* This chart is reprinted from the B. E. College Annual, 1939, which was confidentially submitted by the author to the then Congress President, Netaji Subhas Chandra Bose, in February, 1938, and which served the basis of starting the All-India National Planning Committee.

be out of place to follow the Soviet method and also to begin at the start to translate some of the Russian technical books, for which no permission is needed either from the author or from Soviet Government.

The aforesaid principle is the general method of industrialising the country. Let us for the time being divest ourselves of the views of the common writers on industrialisation. We should remember that to follow the traditional methods is self-deception rather than industrialisation. We have our mechanical engineers, prospectors, metallurgists, fuel engineers, Technologists, etc., although in a very limited number and if we require, we can invite foreign experts and with the help of these engineers, we can start projecting organisation of machine construction and also other industries simultaneously, as shown in the enclosed chart No. II.

A Concrete Example of planning Industry.

It is rather superfluous to say that the production of ordinary cycles, motor cycles, automobiles, tractors, airplanes, defensive machines and the like, falls under the category of machine construction industry which forms the basis of progress of other industries, agriculture, transport etc.

Before starting work we should call our industrial experts, scientists and our leaders to organise a general plan of All-India industrialisation, for a fixed number of years on the basis of natural resources and national brain in order to do away with the economical and technical dependence on foreign countries, as early as

possible. Once the general All-India plan of indust-trialisation, in other words methods of liquidating unemployment is organised, the details can be further worked out by the respective departments both central and provincial.

Nature of Foreign Experts.

Foreign experts whom we are going to invite to help our country on the way of industrialisation and also on raising up a technically minded generation should be chosen from those countries who are most eager not only to help us but also to help themselves in finding jobs for their surplus experts, as it is only the experts who are going to work for their bread, that we may dictate out terms too and whom we may expect to render us a sincere assistance, not the experts belonging to the nations bearing distinctive conviction of colonial complex. Just for the present Germany can lend us sufficient number of her experts and we must not forget that it was just German stock, who some years earlier efficiently helped Soviet Russia in the fulfilment of her industrial plans. If German experts in the estimation of foreign press of to-day are available and are cheap, it may be said with certainty that they are efficient and honest labourers. Same can be said about Chekoslovakia and some other Slav countries, but their experts are not available at present.

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CHAPTER VI

ON THE EVE OF STARTING NATIONAL INDUSTRIES.

Only a short while ago it used to be a general custom in India that in any technical institution, factory or in any of their departments, the head must be a foreigner, no question whether he is an expert or not. And his assistants and lower assistants are Indians, though in majority of cases they are much more qualified than their bosses. In a word, no Indians were allowed to take the initiative or to carry administration of the industrial institutions and factories, whether Government or private. In majority of cases these foreign senior officers, taking the advantage of their superior position in a very shrewd and tactful way, extracted from their subordinates the original ideas and skill which later on passed as the ideas of the bosses.

In this way natives of India scarcely got any opportunity to show their abilities to the public and thus to develop faith in themselves. On the contrary, the foreigners enjoyed all the reputation and acquired experience. This centuries-old practice together with unemployment, has demoralized our educated mass and the result is that neither industrialists nor politicians have any confidence in the ability of our own experts. Thus originated the idea of "inferiority complex" in the mind of our people. In reality this

should not be the case. How to remove this curse from the brow of our innocent engineers and technicians ?

The way is simple, definite and concrete. To start industries, both key and subsidiary, and technical institutions recruiting our own people, taking help from a few foreign experts only in technique and in guiding our young experts but never allowing them to carry on independent construction, designing or act as chief of any institution. If work is started on this principle then within five years we shall see the renaissance of our young technical and industrial generation who will create new technical appliances and industrial methods—construct huge machineries and plants of any description needed for the country and exactly suitable to her needs. To train young people, sending them to foreign countries on a planned basis is an age-old and effective method no doubt, but considering the present international situation it is better and far less expensive for the country to invite several foreign experts on contract basis here than to send thousands abroad.

Practical and Rational Method.

Here in India we used to find a good number of foreign experts engaged in different Indian industrial concerns and technical institutions apart from independent foreign industrial organizations and factories. The main object of these foreign experts was to run the machineries bought from abroad and finally to teach some Indians to run the same, i.e.,

Retarding Activities of Foreigners.

to shut their eyes to real technical knowledge exactly as the owner of a village oil mill shuts the eyes of the bullocks to induce them to work smoothly at the wheel. The factory owner is concerned only with his factory and making some money out of it. He is not interested in Indian nationalism or industrialisation or progress of the country. He is simply a shop-keeper, as if automatically he gets the products from the plant ready for the market. In any trouble he calls the agents of the foreign company who repairs the plant or a particular machine or changes a part taking an exhorbitant price for the task. The owner is not to worry about the expenses because he is at full liberty to exploit his workers and also the peasants who supply him with raw materials and make them to pay the amount that goes to the pockets of Foreigners. Sometimes foreign experts work permanently in Indian firms and in that case they are generally bosses. Their function is to guide the owner as to how to manage the work and they themselves exploit the knowledge and experience of highly educated Indians who are subordinates to them. This matter of things although greatly changed to-day with the advent of National Government, is not yet over altogether.

On the other hand there is a growing tendency of a gronp of our own people mis-representing the ideas of Mahatma Gandhi, who tries to draw back our country several centuries by applying a simple machine like "Charka". The "Charka" is a negative machine.

A positive machine or simply a machine is an instrument by which bigger machanical work can be done with the help of small power. Here *charka*, with the help of big power of a man performs much smaller mechanical work. This is why it is termed as a negative machine.

Activities of Our Own.

Human mind desires acceleration for its performances both physical and mental. A man likes to move quickly his charka-wheel but the thread breaks away. Thus his desire is being retarded continuously an long as he works with it. In this way charka creates slave mentality. His ambition, his spirit, his power, both physical and mental, is being slowly annihilated and the only thing which remains is the songs of ever slavery and ever misery.

Everyone of us is familiar with these songs of our poets and grand-mothers who had been busy with charka.

Charka is a powerful negative machine which can transform a nation within fifteen years an impotent one. Though it is very tiny, yet one must not forget that a little quantity of poison or germ is enough to kill thousands of souls more quickly than the most powerful machine ever constructed by the military authorities.

No charka is found in work in any of the advanced countries, not even in China. It is too old and too inefficient.

To raise the standard of living and culture of a country, this kind of individual, hap-hazard, shop-

keeper's mentality can be of no avail. It is necessary to look at the matter from wide perspective. Foreign experts and foreign machineries should be welcomed, not for a particular person or a factory, but for constructive work of the country, and the welfare of the nation as a whole. One foreign specialist can be invited by the Government on contract basis so that he may serve the country in a particular branch of industry according to the direction of the Government or the owner of the factory. He is not to be attached to a particular person, his services should be utilized by different organisations and in that case the foreign expert can also obtain a larger salary and much honour and respect. He may also have the satisfaction of doing useful service to the country that has invited him. This is the way how Soviet Russia utilized the services of foreign experts in her national planned economy.

How the Services of Foreign Experts should be utilized.

On principle no foreigner should be allowed to occupy the post of an administrator i.e. to be manager, director or chief of any department. Foreign experts must work under the control of our own organiser, no matter whether he is a technician or not. We must start several courses for training industrial organisers who will know how to utilize the services of the foreign experts.

It is not very difficult to choose proper experts if we appoint them on contract basis on the following terms :— (1) definite special duty, (2) definite period of service

after expiration of which the expert is liable to leave the country, (3) definite pay and other facilities as per agreement, (4) provision for accepting willing foreigners who would have record of sincere services into citizenship of the country with equal rights.

To speak frankly, so far a great number of foreign experts have been invited both by Government and by private owners, but none of them tutored one single Indian in the proper sense of the term except how to run the foreign machineries and become a good canvasser of the same.

Methods applied and suggested to prepare Technical Cadres.

There appears to be a second methed of training our young men supported by many of our generous countrymen. This is simply to send them abroad, or, even to arrange with some foreign manufacturers who sell their goods to India, so that those manufacturers will train young Indians.

None likes to cut the branch of a tree on which he is standing. Of course, it is not natural to believe that these foreign manufacturers will be willing to spoil their future prospects by disclosing their trade and industrial secrets. The real and effective method of training our young people is to have it done here both by our own and foreign experts and then to send some of them to different foreign countries according to particular speciality of that country to perfect their knowledge. For example, to send some to Sweden to perfect their knowledge of hydro-electric power station building, some to Russia to learn furnace building

industry, to America to learn motorcar building, etc., etc.

Upto this time, industry, technique and technical education in our country have been confined merely to maintaining and running imported machineries, as is obvious from the import list given below. We are to change totally this policy and to transform the country from one of importer into that of manufacturer of machineries and machine-making machines. Even if foreign countries are for a time ready to dump our market with their producing machines, still on principle we should reject them. It is better to buy foreign products for a time being than to buy producing machines. In this age of progressive science and industrialisation the building of machineries means building of the nation. We must not pay too much consideration to temporary commercial gains but must look to our nation, a collective of human souls, who should be trained, educated and emancipated, as undoubtedly they have the same right to enjoy happy and prosperous life as other nations of the world.

MACHINERIES

Import to Indai

1935-36	Rs. 13,67,65,950
1936-37	Rs. 14,13,93,696
1937-38	Rs. 17,15,61,354 – British 64·1 p. c., Germany 14·9 p. c. & America 7·9 p. c.

	1937-38	1936-37
1. Primemovers...	1,69,83,517	1,62,75,627
2. Electrical machinery...	2,69,07,880	2,55,17,807
3. Agricultural & Boilers...	1,16,86,372	12,02,594

		1937-38	1936-37
4.	Cotton Textile...	2,92,12,729	1,80,72,908
5.	Jute...	1,06,15,192	73,97,840
6.	Other textile parts...	52,21,477	20,63,133
7.	Metal working...	36,11,862	29,17,831
8.	Mining Machinery...	16,92,840	73,54,137
9.	Oil Crushing...	22,80,274	27,59,773
10.	Paper Mill & Rice Mill etc...	44,89,439	19,46,888
11.	Pumping Machinery...	36,14,663	30,57,418
12.	Refrigerator...	28,28,692	15,54,116
13.	Sugar Mill ..	69,86,183	95,16,462
14.	Sewing and Knitting...	82,00,427	60,96,905
15.	Tea Machinery...	20,86,928	14,77,250
16.	Type writers...	21,99,851	19,14,840
17.	Miscellaneous...	2,98,96,839	2,25,40,022
		17,15,61,354	14,13,93,696

As regards financing the industries, I desire to say one thing from my personal experience in Soviet Russia. It is obvious that in the first period of industrialisation we shall require vast capital. This should be organised capital. If possible, it should be Government capital, because private capital is hardly organised. My own opinion is that if we take private capital, we should not take it in the way of participation of private capitalist-owners in direct industrialisation of the country. It may be taken in the form of loan, granting proper benefit, after a number of years, to the subscribers of our industrial loan. And equally we can take contribution of thousands of rupees from rich and even a few annas from the poor.

The masses must be induced to take interest in our efforts. So anything that even the poor workers will con-

tribute should be welcomed to us. Without the active help and enthusiasm of the masses it will be rather impossible for us to be successful in raising national capital for constructive work of the nation building.

Enthusiasm of the whole nation is an enormous asset. In many cases fates of great wars were decided only by the enthusiasm of the fighters. The brightest example is Russian civil war of 1919-20, when the famished and wretchedly dressed fighters of the Red Army, sometimes even without guns, but with only axes and daggers, conquered well-organised White Army, possessing first class military armaments, and regularly supported by foreign powers. And this miracle happened only through the enthusiasm of the masses. The same enthusiasm of the people has helped Russia in her miraculous industrial development, helped her to overcome all the difficulties and troubles within a very short period of time and most of all helped her to emerge victorious over such enemy as Hitlerite Germany, whom no other country could handle as equal. This enthusiasm will help us too, if we are able to create and direct it properly.

Now, it will not be out of place to give here a brief note setting forth the classification of the machine-building industry. The index of a country's technical advancement and culture is provided by the consumption of power per head of the population. This is why the power machineries are put in the first place in the machine-building industry. The

Civilisation measured in Technical Data.

position of our country with regard to the consumption of power is hopelessly miserable in comparison with other countries as will be clearly seen from the simple fact that for 1935 Canada was consuming 2000, U. S. A. 950, England 600, Soviet Russia 150, China 7 and India only 4 kwts. per year per head of the population.

I. The Power Industry comprises :—
(1) Steam-Turbines, (2) Hydro-Turbines, (3) Turbo-generators, (4) Hydro-generators, (5) D. C. and A. C. Generators, (6) Transformers, (7) Oil Engines, (8) Gas Engines, etc. etc.

II. Next, the Engineering Industries consist of :—
(1) Boilers, Steam Engines, (2) Automobile, Agricultural Machineries, Tractors etc. etc., (3) Compressors, Pumps etc., (4) Press, Cranes etc., (5) Ball-Bearing works, (6) Electrical goods etc. etc.

III. Metallurgical, Mining and Chemical Industries etc. are :—
(1) Blooming Mills, (2) Turbo-blowers, (3) Pig casting Machines, (4) Mechanical picks for coal, etc.

IV. Machine-tools and tool making :—(1) Lathes, (2) Drilling, boring, shaping etc. Machines, (3) Surface planing, (4) Calibre and Freser works.

V. Light Industries :—(1) Textile, Sugar, Paper Machineries etc. etc., (2) Boots, shoes, dresses etc., (3) Match, (4) Food industry.

VI. Transport :—(1) Land transport, Railways, Aviation etc.

It is obvious that the railways of our country are probably amongst the worst in the world, and call for immediate improvement and reconstruction. In this light it will be found necessary :—

(1) To increase the efficiency of the locomotives by changing old models. It is interesting to remark

that Soviet Russia has constructed a new model of E-locomotive with a traction power of 10·2 tons, which exceeds by more than 75 p. c. the old-type locomotive.

(2) To modernise the locomotive by the introduction of economisers, super-heaters, rocking grates etc. and by use of suitable coal etc. Applying the above methods in 1932 the U. S. S. R. obtained 37% higher traction power than in 1913.

Regarding the water transport, we require :—

(1) Hydro-technical constructions, such as in the U. S. S. R. the well-known Moscow-Volga canal and White-Sea-Baltic canal. By the introduction of these methods floods can be stopped, at the same time, both irrigation and transport problems can be tackled successfully.

(2) Organisation of ship-building and ship-repairing yards, mechanisation of loading and ordinary operations, introduction of dispatchers, telegraphic system etc.

Air Transport

1. Construction of Aeroplanes, Hydroplanes, Motors etc.
2. Creation of cadres of Pilots and Mechanics.

VII. Communication

Communication service :—Post, Telegraph, Telephone and Radio are responsible for the industrial and cultural progress of a country. Therefore it is urgently required to organise :

1. Production of Telephone apparatus, Radio and their parts.

VIII. Precision Instruments

In conclusion, it remains here to say that before starting national industries it is necessary to give serious thought to the following

three subjects, the details of which are briefly put in the charts below :—

A. The creation of industries.
B. The training of industrial organisers.
C. The creation of the cadres and industrial-minded nation.

A. CREATION OF INDUSTRIES

(1) Methods to be applied to select industries :—

(a) Survey of National Resources.	1. Fuels & Power. 2. Raw Materials.
(b) Techno-Economical Survey of Industries.	1. Studies of different industrial review of world literature. 2. Study of present market.

(2) Methods and policies to be adopted to start new industries :—

(a) Finance	1. Industrial loan, specially by small amounts from the masses. 2. Government subsidy to private owners with composite profit.
(b) Equipments	1. To project, construct and build here. 2. To purchase one unit, change, improve & build others here.
(c) Experts	1. Employ our own. 2. Invite Indians engaged abroad specially in the U. S. S. R. 3. Invite foreigners on contract basis.

B. TRAINING OF INDUSTRIAL ORGANISERS

1. Political trainings :—
   (a) International situation.
   (b) Imperialism, fascism, socialism and democracy.

2. Methods of utilizing the services of foreign experts as well as of our own experts and technicians :—
   (a) Foreign experts' help should be sought in projecting, constructing and in the practical field.
   (b) Our Physicists, Chemists and Mathematicians should assist in the theories of industrial processes.
   (c) Improving qualifications of young experts on the basis of social services and self-promises.

3. Methods of organisation of labour and discipline :—
   (a) Technical minimum knowledge, modern machines, control and measuring instruments.
   (b) The knowledge of piece-work, conveyor method, social services etc., in exploiting labour.
   (c) Experience in foreign industrial organisations.

C. CREATION OF INDUSTRIAL-MINDED NATION AND CADRES

1. Reformation of the present educational system :—
   (a) Different Technical Institutions should be under the respective Ministers. ... ... { 1. Technical Colleges. 2. Technical Schools. 3. Workers' Faculty.
   (b) System of units Foot-Pound-Fahrenheit should be changed to Metre, Kilogram and Centigrade.
   (c) Text-book should be of practical nature. Translation from Russian advisable.
2. Technical Propaganda :—
   (a) Department of Inventions and Rationalisation.
   (b) Technical newspapers, advertisements etc.
3. Starting National Model Factory :—
   (a) To create pioneers of industry.
   (b) To manufacture machine-making machinery.
   (c) To recruit self-sacrificing volunteers.
4. Organisation of social services in every sphere of life :—
   (a) In introducing technique and industry to the masses.
   (b) In obtaining educational degrees.
   (c) Physical work in the form of public service.

CHAPTER VII

PLANNING IN EDUCATION

It is gratifying to note that the young generation, on whom depends the future of our mother country, are fully conscious of the present situation of the world in general and our mother country in particular. Many of our countrymen, even some youngmen too, cannot appreciate the modern dynamic trend of the progressive world and try to throw back our country by several centuries.

To-day our country is passing through a transition phase. She stands at the thresholds of a new socio-economic order. The potential power of India, both animate and in-animate, has risen to such height that its transformation to dynamic action is immediate and inevitable. All of us know what is revolution. Revolution can follow two different ways. Political revolution destroys everything and on the ruins of the past creates a new world. Such revolution took place in Russia on the 7th November, 1917. That mighty event was, however, too costly in blood. On the other hand, when it is the revolution of socio-economic order, it can follow the path of construction. This revolution creates, constructs and builds a nation. The author was fortunate enough to join and devote his youthful energy in such constructive revolution of the U.S.S.R. which took place in the middle of 1928.

Two Aspects of Revolution.

"The most interesting thing about India is that her soil is rich and her people are poor," said Mr. M. L. Darling. The natural resources of India are so varied and vast that after Russia she is perhaps the only country in the world which can close her boundary i.e., stop all kinds of import, rebuild her whole life, develop her industries and advance with glorious success to the standard of other civilised states of the world. We are living in the age of science, which is the foundation of industry and technique. "*Industry and technique solve all problems*" rightly said comrade Stalin. To rebuild the life of the country means to create such a life as will foster science and register progress. Unfortunately some of our leaders are still clinging to the old ideologies. The result is that India to-day, inspite of all her unlimited possibilities, finds herself to be a country of countless unemployed and undeveloped rich natural resources, *a country of consumers, a country of importers.* To keep our existence, to eke out a decent living, we have to transform our country into that of *producers, and manufactures* of machineries and machine-making machines. These very terms consumers and producers, importers and manufacturers, are antagonistic to each other; so the transformation suggested hereby cannot be a slow process of evolution—it must be in the nature of an overhaul—a constructive revolution. And here national economic planning lends its powerful hand of assistance.

Role of Industry and Technique.

The word and the idea of national planning is associated with the word "*Gosplan*" of the U. S. S. R., organised on the 24th February, 1921, and it is to be remembered that the U. S. S. R. is the only country which fully applied national planned economy—the fact that enabled her to score an outstanding success not only in every sphere of her national life, but also gave her a chance to hold her stand on a firm rock of progress even after the terrific devastations wrought on her soil by world war No. II. Here one should not be misled by the so-called planning or rather hap-hazard planning of the capitalist countries as envisaged by Agricultural Marketing Act, Coal Mines Act, Emergency Relief, Price Control etc. These are temporary make-shifts to save the Laissezfaire policy from destruction and chaos, as well as to give some consolation prize to the teeming millions, leaving them in belief that a new socio-economic order, which will solve their miseries is on the quick approach.

Deception in Planning.

Our leaders of the congress gave some thought to national planning as late as 1929—passing resolutions in the A. I. C. C. meeting held in May, 1929 in Bombay: "In order to remove the poverty and misery and to ameliorate the condition of the Indian masses it is essential to make revolutionary changes in the present economic and social structure of the society and to remove the gross inequalities." But it was our beloved and ardent Netaji Subhas Chandra Bose who

Question of Planning in Congress.

during the term of his presidentship of the congress gave a direct and bold lead on this issue. The proposal of the formation of the first Indian national planning was finalised at the conference of provincial Ministers of Industries held in Delhi on the 2nd. and 3rd. October, 1938.

Now coming to the question of education under national planning, I like to say that it will be useless to nurse any longer the fantastic notion that "education is for education's sake". It must be understood that in reality education is the art which helps one to contribute to the constructive work of the country as well as to lead a decent, cultured and comfortable life. If education is given to the masses in accordance with the general constructive plan, it will create the cadres fit for serving their country and ultimately the disastrous poverty and unemployment can be liquidated. This is what has been accomplished in Soviet Russia, and to clarify this idea I shall invite your attention to the Soviet universities and colleges. Suppose a Russian youth has finished his preliminary compulsory education, i.e., the standard of our Matriculation, now what are the problems that are facing him? Study is the clear road to future life and work is duty. How this duty towards the fatherland can be discharged in the most effective way? It is necessary to choose the special subject of study which is suitable to one's own capacity; it is necessary to think over what kind of work will suit one better.

What is Education.

There are so many colleges to choose. Entering suppose, the Engineering college or that of Science, and getting sufficient Government provision, all the attention of a disciplined and self-conscious youth will be concentrated on the idea that he is to be fit for further work, that he is belonging to one intimate family, one nation, which is struggling her utmost for the happiness of all her members. The most striking fact in the system of Russian education is that every student is assured of his future job. Number of students in different educational institutions is being regulated according to the needs of the state. Education, being included into the planned economy, has a conspicuous part to play in the creation of nation. It is calculated, for example, that within the next four years it will be necessary to train 15000 engineers, 10000 doctors for villages and cities, 8000 teachers, 1500 dancing masters, 1200 songsters, 5000 qualified sellers for the village and city government shops, 2000 tractor drivers for the collective peasant fields. Presently the corresponding institutions—Engineering, Medical, Pedagogical colleges, Hereographical schools, Conservatories, Commercial institutions, and academies and schools attached to the tractor-stations etc.—will accept nearly corresponding number of students.

After they have got their training, they all will be immediately absorbed in the gigantic Government Machine. Their acquired knowledge will be then and there utilised for the benefit of their country. This is

what we would want for our country, too. Complete re-organisation of the educational system, able to give us the key to modern science and technique—those golden treasures of humanity—is what clearly appears to be the urgent need of the day. The country does not want dead knowledge but she wants living, devoted, ardent members of the society, able to sacrifice, able for comradely feelings, able for organisation of labour—to control the destiny of the nation and to change the face of their country.

Results of Training.

Returning to the question of planning, I would like to say that while planning any branch of national aspect as well as that of education, we are to bear in mind two different tasks—firstly to plan and to indicate in precise figures the maximum aim of attainment under favourable circumstances as well as the minimum in adverse circumstances, and secondly, to lay down specific methods of carrying out the plan. For example, during the first five-year plan the percentage of literacy to be: the maximum figure at 50% and the minimum at 30%, during the second five-year: the maximum literacy 75% and minimum 50% and during the third five-year the figure is maximum 90% and minimum 75%. Of course peculiar circumstances of particular period of time can assist or retard the development of the plans. Russia over-fulfilled her first five-year plan in 4 years. This could have taken place due to specific circumstances of wide-spread

Maximum and Minimum Limits of Progress in Planning.

unemployment all over surrounding capitalist countries —the fact that enabled Soviet Russia to utilise the services of large masses of foreign experts for her educational and industrial uplift.

The next step is to allot different plans to the appropriate administrative organs or ministers for execution. For example, different branches of technical education should be entrusted to ministers with different portfolios, i.e., Medical Education to the Minister of Public Health, Civil Engineering to the Minister of Public Works, Railway Engineering to the Minister of Transport, Music and Art to the Minister of Public Education, Engineering and Metallurgy to the Minister of Industries, etc.

Different Vocational Training under Respective Ministers.

The maximum number of institutions and the number of students for different branches of technical education is to be fixed by different administrative organisations who later on are to utilise these students as their respective employees, and are naturally obliged to bear the expense of training. For example, in the training of medical students and nurses the number of trainees is to be given by the Ministers of Public Health of different provinces according to the needs of the population of the respective provinces as well as depending on the financial possibilities of the provinces, so that after the completion of training every student can be effectively employed for the services of the people.

The example to what sad consequences the

hap-hazard system of eduction without any previous planning may lead to, may be vividly demonstrated by the fact that many brilliant students of our mother country, who are going abroad for their studies in different subjects even with an adequate State Scholarship, after completing their studies and returning home either remain unemployed or are engaged on jobs entirely different from the subject of their previous studies. And it goes without saying that such painful situation creates a great loss to the country in general, with its highly trained and qualified cadres rotting unemployed or improperly employed.

Sorrowful Effect of Aimless Training.

Number of minimum and maximum students of fundamental science such as Physics, Chemistry and Mathematics, may be given by Central Government and can be filled up according to the availability of talented boys and girls in different subjects.

The question of training cadres with regard to their social responsibility may be solved to a great extent by allotting particular duties of social service to each student along with the theoretical lectures. Such practice is widely applied in Soviet Russia and proved to be of immense value during the war crisis, when students and school boys and girls entirely did the jobs of domestic servants on voluntary basis, by literarily going from door to door and offering their services for cleansing, cooking, sweeping etc. Many other jobs were fulfilled as well by mere Russian

Social Service in Student-life.

youngsters, who with wonderful success have replaced the adults of lighter factory jobs, thus liberating huge man power for the battle fields. The inner battle of Russia—its home front—was fought and won mainly by youngsters and old grand-fathers, whose social consciousness inspired them with enthusiasm and unlimited devotion to the cause of their country.

So far on the ways of training of our young cadres, but what about a large number of our unskilled or semi-skilled, illiterate or semi-literate labourers, who are the product of foreign domination combined with our own neglect and quite inadequate care to deal with the gravity of the problem? In this case it would be advisable to follow practical solutions adopted by Soviet Russia in the way of creation of special workers' schools and faculties so as to impart literacy and training to the grown-up labourers without detaching them from their actual work and occupations. The task seems a gigantic one, but like in everything else the result of Russia leaves us in a bright hope of the probability of quick success. Indeed at the start of the first five-year plan in Russia, a number of Russian youngsters as well as adults were found simply illiterate or technically ignorant, nevertheless they were the only available cadres to be employed in the huge task of rebuilding Russian industries smashed by revolution and civil war.

Adult Education.

Lenin wrote his famous thesis on "What is to be done?" and proceeded with the speedy organisa-

tion of the net of schools attached to the factories, and well-known by the name of Rabfaks or workers' faculties. It would be rather wrong to describe these as a failure as so many capitalist critics are attempting to do, or to assume that the task of such faculties was merely in preparing highly qualified specialists and experts out of the ranks of workers. These faculties had in their own time played an enormous role in the campaign of universal literacy in Russia, but with the raising of level of general literacy and establishment of net of institutions for technical education, the existence of Rabfaks became superfluous and unnecessary. In India too we require such Rabfaks at the start of our own educational drive, and like in Russia too, they will be abolished or replaced by educational organisations of some other varieties, according to the need of the time.

Workers' Faculty in the U. S. S. R.

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CHAPTER VIII

PLANNING OF COAL INDUSTRY IN INDIA

[* The Sub-committee, A. I. M. O., considered Dr. A. K. Shaha's proposal on "planning for the consumption of coal" and it was decided to make representation to the Government on those lines.]

A. Planning For Supply

Coal is the black gold of a country, being the bread to her industries. Yet the value of this black gold is not sufficiently realised by industrial magnates and mine-owners and as well as the national Government.

Classification of Coal Uses.

Even with the development of other kinds of fuels, such as oil, natural gas, etc., coal did not loose its supremacy as the chief source of fuel, power and re-acting agent for Metallurgical purposes.

Before, however, going into details of the existing underlying principles and methods of supply of coal (mining) and that of its distribution (consumption) in India, it may be interesting to outline the uses of coal according to the following 3 distinctive groups :—

1. At the first instance, in India, coal is the main fuel for firing domestic ovens, industrial furnaces, for transport industries and boilers in steam raising, for generation of electric power and processing works —the other sources of fuel, such as oil being very

* The All-India Manufacturers' Organisations Journal, Vol. 2, No. 8, p. 1 and 2, March, 1948.

scanty, the sources of natural gas not yet traced out, while hydro-power not sufficiently developed.

2. Secondly, in addition to its valuable advantages of a fuel, coal is indispensable re-acting agent for Metallurgical purposes. The development of iron and coal industries are closely interwoven and serves as the basic index of a country's wealth, power and civilization.

3. Thirdly, coal is a basic raw material for the manufacture of chemicals, dyes, fertilisers, drugs, etc., although so far very little attention is paid to coal chemistry in India.

> "The word waste sounds very strange to an industry, since an industry always tries to make out the best profit where there can be no place for waste. The Indian coal industry is however notorious for having caused much of avoidable waste to the coal property, as well as loss of human life."—*All-India National Planning Committee.*

It has been found in two great schemes of planning—that of Gosplan of Russia, and later its offspring N. P. C. (All-India National Planning Committee)—that in the interest of a country all her key industries, mineral wealth, public utilities, railways, communications etc., should come under the ownership of the state, at least under strict state control. And among the mentioned the first and the foremost importance must be stressed upon coal—this black jewel in the crown of a country's wealth. Such jewel indeed

Case for the State Control.

that on its background Herr Hitler has threatened the world to change its gold standard into that of iron.

Thus state control in the conditions of democracy versus state ownership in Soviet structure would be, according to the passed resolution of N. P. C. as well, the most effective measure to bring about scientific and rational production and distribution of coal in India, apart from various scientific suggestions and introduction of modern methods of combustion technique, with which I am mainly concerned and which will be discussed later.

Let us now have at a glance the conclusions of N. P. C. entitled "case for the state control".

"We are of opinion that the state should exercise strict control over the coal industry for the following reasons :—

(*a*) Coal is a valuable and irreplacable commodity which is regarded as a national property in all countries.

(*b*) It is one of the chief sources of power, the basic material for transport and industries and its importance to India is all the greater on account of scanty resources of oil in India.

(*c*) With the coal industry is associated the prosperity of the iron and steel industry—one of the key industries.

(*d*) It is one of the important raw materials for synthetic chemical industries (dyes, drugs, antiseptics, etc).

(*e*) With the prosperity of the coal industry, is linked up the welfare of a large number of people engaged in coal mining.

(*f*) The control will bring about economic stability to the coal industry, which is one of the indispensable steps in reducing waste in mining. So long as coal mining is carried on in a state of chronic depression, little progress in reducing the present waste can be hoped for even in the face of statutory regulations. It can at the utmost result in increasing the number of abandoned mines."—*Revised and final interim report of the Sub-committee on Power and Fuel, p. 29.*

It is interesting to quote from the speech of H. E. Sir James Sifton, the then Governor of Bihar, delivered at the annual dinner of the Geological and Mining Institute of India as early as 15th January, 1937 :—

"I feel sure that most of you will agree that there was an initial mistake ; that the coal of a country is a national asset, that it ought to be protected by Government from wasteful exploitation for ephemeral profit, and that the Laissez-faire policy applied to irreplacable national wealth is exploded and out of date. The pitiful part of the history of the coal-fields is the absence of the least of Government intervention and the aloofness of Government from the problem of getting the best out of the mineral wealth of the country."

Of no less significance are the remarks of the Coal

Mining Committee appointed by the Government of India, 1939 :—

"Coal is a national asset on which the manufacturing industries and the commercial expansion of the country depends. A landowner or colliery proprietor is at present in a position to waste this national asset without restriction. By such waste he may obtain immediate financial benefit, but he injures the country, damages his property and diminishes the estate of his heirs. We hold that the state has the right, in the interests of the community, to step in and prevent the dissipation of the country's resources. Indian coal is not inexhaustible and scientific mining methods are needed for its conservation and economic extraction."

Again, by the same Committee :—

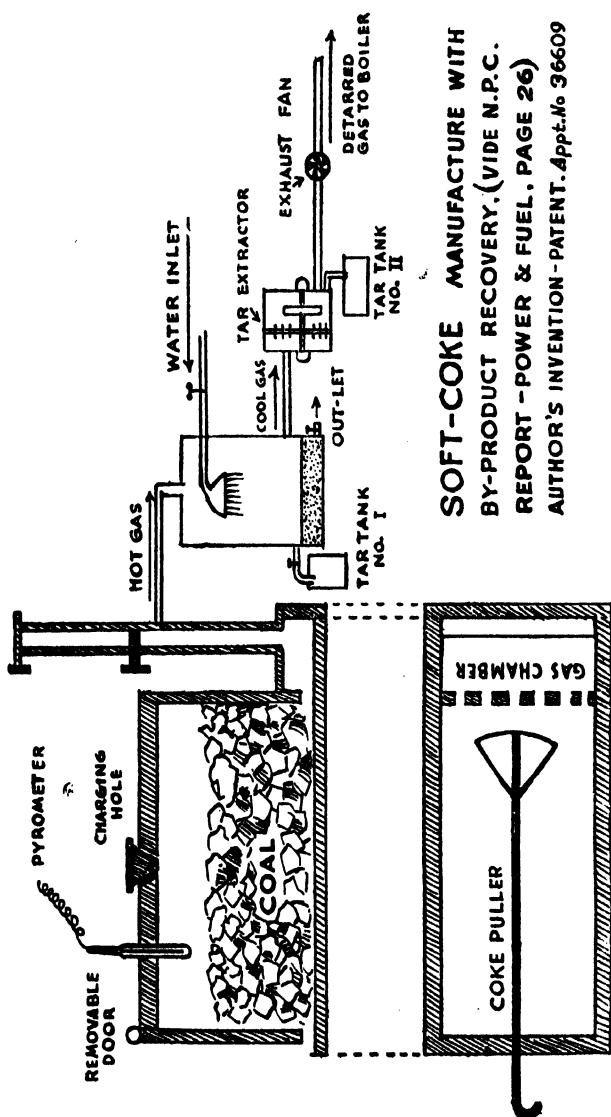
"We are definitely of opinion that state initiative and state intervention constitute the only effective remedy and are already overdue." The misuse of coking coal can be stopped by the order and control of the Coal Commissioner, as it would be a great contribution towards the conservation of India's mineral wealth. Above that it is highly desirable to introduce the recovery of by-products in 'soft coke' manufacturing, viz., gas and tar. If to quote from the resolution of N. P. C. :—

"...It has been estimated that on the most conservative basis in the Jharia coal fields alone, some 30 million gallons of tar comparatively rich in motor spirit, light oils and other substances, are being wasted every year. As the 'soft coke' industry is

confined within the restricted area of Jharia and Raniganj coal fields, every 'soft coke' manufacturer should be under statutory obligation to recover the tar for further treatment in a central tar distillation plant working under state control."—*All-India National Planning Committee, Power and Fuel Sub-committee, p. 26 and 32.*

We shall now deal with the question as to how long the total coal resources in India can be expected to last. The well-known fact is that about 98% of annual production of coal is coming from Bengal and Bihar coal fields. From this annual output, which in 1939 amounted to approximately 24·5 million tons, nearly 20 million tons are met by the good quality coal. If at this rate of consumption it could be met by coal of all varieties, and the loss at the time of extraction would not exceed 50%, the reserves of all workable coal which India possesses, could last for about 500 years. Yet this somewhat favourable figure can be hardly relied upon keeping in view the predominant factor of inefficient methods of extraction (the best coal being recovered first), lack of proper co-ordination and absence of strict control. So far the extraction of coal of all available types have hardly been adopted in any colliery and when the best seams are extracted the mine as a rule is abandoned, with ultimate loss of all inferior coal, which could he used under the direction and advice of an expert. The losses of mining are scarcely securing the output of even 30%, as will be

Total Workable Coal.

seen further from Dr. Fox's discussions, who as well

By the Courtesy of Mining Corporation Ltd., who has taken up the task of solving this important National Problem.

have provided a singularly clear estimation of total

resources of Indian coal, along with the regions of coal formations.

TOTAL COAL RESERVES IN INDIA

(According to Dr. Cyrill Fox's Estimation)

	Region	Reserves
1.	Darjeeling and Eastern Himalayam region ...	100 million tons
2.	Giridih, Deogarh and Rajmahal Hills ...	250 „ „
3.	Raniganj, Jharia, Bokaro and the Karanpura Fields	25,650 „ „
4.	Son Valley—Auranga to Umaria and Sohagpur	10,000 „ „
5.	Chattisgarh and Mahanadi (Talcher) ...	5,000 „ „
6.	Satpura region—Mohpani to Kanhan and Pench Valley	1,000 „ „
7.	Wardha-Godavari—Warora to Bedadanuru...	18,000 „ „
	Total...	60,000 million tons

RESERVES OF WORKABLE COAL

	Region	Reserves
1.	Darjeeling Foothills Lisu-Ramthi area ...	20 million tons
2.	Giridih, Jainti and Rajmahal Hills ...	80 „ „
3.	Raniganj, Jharia, Bokaro and Karanpura Fields	10,150 „ „
4.	Son Valley—Hutar to Umaria and Sohagpur	2,000 „ „
5.	Chattisgarh and Mahanadi (Talcher) ...	1,200 „ „
6.	Satpura region—Mohpani to Kanhan and Pench Valley	150 „ „
7.	Wardha-Godavari—Warora to beyond Singarani	6,400 „ „
	Total ...	20,000 million tons

RESERVES OF GOOD QUALITY COAL

1.	Giridih and Jainti...	40 million tons
2.	Raniganj ...	1,800 „ „
3.	Jharia ...	1,250 „ „
4.	Bokaro ...	800 „ „
5.	Karanpura (North and South) ...	750 „ „
6.	Hutar, Johilla, Burhar ...	50 „ „
7.	Kurasia, Jhilmili etc. ...	30 „ „
8.	Talcher to Korba...	200 „ „
9.	Mohpani, Kanhan-Pench ...	30 „ „
10.	Ballalpur-Singarani ...	50 „ „
	Total ...	5,000 million tons

RESERVES OF GOOD COKING COAL

1.	Gridih ...	30 million tons
2.	Raniganj ...	250 „ „
3.	Jharia ...	900 „ „
4.	Bokaro ...	320 „ „
	Total ...	1,500 million tons

It is interesting to note here some of the remarks of Dr. Fox (from Geological Survey of India, 1934, Vol. LIX, p. 346):—

"I try to show how the original estimates of coal reserves have actually compared with the coal extracted. And I have thus tried to make it clear that the life of some coal fields depends not on the total reserves but in reserves in one or perhaps two seams. With even as high percentage of extraction as 67%, from definite areas in these seams, before the coal field

is abandoned, the coal obtained will be a fraction of the total reserves of the whole field."

Discussing the case of several different coal fields Dr. Fox has pointed out that, for example, at Singuni the percentage of extracted coal to its total reserve was barely 15%.

"Even the losses of one ton per ton extracted rarely appear to be enough in the case of individual seams. But when it is a motto of the proportion of coal in the calculated reserves of a field with two or more seams it seems doubtful if we can count on even 30 percent."

It is very frequent case in India that after the coal from the best seam has been exhausted, the mine is abandoned and the coal from the other seams of that mine, may be slightly inferior, is permanently wasted. The vivid and striking example can be found in Burdwan estate evident to the effect that in one case one of the biggest coal firms represented in Calcutta, was found responsible for working out the lower (Poniati) seam of selected grade coal to the immediate damage and subsequent loss of the upper (Koithi) seam of 1st grade quality.. The landlord was satisfied with some poor compensation, but the amount of coal that was being lost had been reliably estimated to be 3½ million tons.

The irresponsibility of colliery owners as well is to be blamed for the waste and damage to the coal property done by fires due to spontaneous combustion in coal mines, leading to collapses and

heavy loss of human life. Thus in Jharia coal fields alone, which are the scene of the most severe fires, there have occurred a loss of about 6½ million tons of very good coal (the figure holds good till 1940 and must be now considered to be possibly higher), the total seams have been estimated to contain over 45 million tons.

Cheapness of coal market in India and complete lack of co-ordination till recently, have as well greatly contributed towards squandering of good quality coal, not to speak of the inferior coals which are simply abandoned in the mines, being not worth the salt, and which nevertheless constitute a large portion of valuable mineral wealth.

The following table shows vividly the course of diminition in extraction of inferior coals in Raniganj and Jharia, the two principal coal fields of India, along with the fall of prices per ton of coal, which at any time was too low in comparison with Europe and America.

The total production of coal in India in different years (from 1930 to 1939) is shown below in thousands of tons :—

1929-30	1930-31	1931-32	1932-33	1933-34
22,375	22,714	19,513	18,064	18,218
1934-35	**1935-36**	**1936-37**	**1937-38**	**1938-39**
20,846	20,875	20,064	23,479	24,815

RANIGANJ COAL FIELD

	1920	1923	1930	1935
1. Annual output in tons ...	4997679	5557424	728691	7348323
2. Percentage of Selected and Grade No. I extracted ...	75	76·1	91·3	94·8
3. Percentage of Grade No. II and Lower extracted ...	25	23·9	8·5	5·2
4. Average pitmouth value per ton in Rupees ...	6/2/0	8/13/0	4/0/0	2/9/0
5. Average price per ton of coal delivered into wagons	8/12/10	12/2/3	5/14/0	3/4/0
6. Percentage of total British Indian output ...	29·26	29·62	31·82	34·97
7. No. of Mines ...	305	355	208	191

JHARIA COAL FIELD

	1920	1923	1930	1935
1. Annual Output in tons	9294040	10346015	10753868	92452902
2. Percentage of Selected and Grade No. I extracted ...	71·7	63	76·9	76·8
3. Percentage of Grade No. II and Lower extracted...	28·3	37	23·1	23·2
4. Average pitmouth value per ton in Rupees ...	4/10/0	6/13/0	3/10/0	2/8/0
5. Average price paid per ton of coal delivered into wagons ...	6/8/6	9/3/6	3/11/0	2/11/0
6. Percentage of total British Indian output ...	54·41	55·14	47·41	43·99
7. No. of Mines...	335	365	254	206

B. PLANNING FOR THE CONSUMPTION OF COAL

Serious attention is being given by the Interim Government of India for the increase of production of coal with the aim to attain the figure of 41 million tons per year in 1956 (page 48*).

I believe, my humble scheme for the scientific and rational use of coal, i. e., relating to consumption of coal presently raised from different coal fields in India, will not fail to draw the interest and attention of the authorities concerned.

However before discussing the scientific and rational methods of use of coal, let us have a glance at the approximate data of coal consumption in India. Taking the average extraction of coal from 1938-43 as 28 million tons per year (page 294*), the comparative consumption by different industries will be as follows :—

Analysis of Coal Consumption.

1. Railways are the largest consumers of first grade and even coking coal and are utilising as much as about 8 million tons of coal per year (page 298*).

2. Iron and steel industries are the next in consumption of coal and their need of coal can be taken at average 6 million tons per year (page 298*).

3. In operating coal mines themselves, the consumption of coal as well as loss combined together are responsible for about 2½ million tons per year (*Indian Coal Statistics of 1943*, page 8).

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* Pages noted from the Report of the Indian Coal Fields' Committee, 1946.

4. Cotton, jute and paper mills consume about $3\frac{1}{2}$ million tons every year (pages 35 & 39*).

5. The consumption for domestic uses (chullas, segries, cooking ranges, cookers etc.) can be roughly estimated at $2\frac{1}{2}$ million tons (page 46*).

6. Fire-bricks and pottery works consume about 2 million tons (page 35*).

The balance of $3\frac{1}{2}$ million tons is being consumed respectively by Admiralty, Navy, Port Trust, Coast Shipping etc. etc.

The term "rational use of coal" has two aspects. Firstly, it means the minimising of avoidable loss, and secondly, the use of proper grades of coal as suitable for different industries. The minimising of loss means the increase of production. The loss can be largely reduced by the adoption of scientific methods of combustion. Thus the proposed scheme goes parallel with the increase of production which the Government is so anxious to have.

Here it will be sufficient to point out only the losses incurred by industries which are consuming large amount of coal, as well as the immediate means of avoiding the same.

Rational Use of Coal.

(1) First huge loss is being incurred in the process of manufacture of soft coke in stack burning and hard coke in bee-hives (pp. 232 & 40*). Per sample, in the Jharia coal fields alone, above 30 million gallons of tar is being burnt in the atmosphere every year. Meanwhile this loss can be avoided by introduction of methods of

low temperature carbonisation of coal, as adopted by England, Germany and Russia. As however the foreign installations are rather too costly to buy, reference may be made to my Patent Application No. 36609, dated the 1st February, 1947.

(2) *The loss in operating mines themselves.* Mines possessing coking variety of coal use the same coal for operating them. This kind of misuse can be easily avoided by exchange of coal between the neighbouring mines.

(3) The railways use first grade coal and even coking coal for running their locomotives. "The coking coal which ought to be exclusively reserved for smelting purposes is now being mostly used for other purposes. In 1935, 11·5 million tons of coking coal were raised and only 2·5 million tons used for smelting. The rest was used for purposes which could be served by other varieties of coal. It is feared that this sort of misuse will continue unless it is stopped by the Government."—(*N.P.C. Report on Fuel & Power*, p. 25.) Sometimes trains running from Quetta to Nockkundi-Jahidan take coal from Bengal. Local low grade coal, rubble or dust, enriched with molasses and then briquetted can serve the purpose without alteration to engine-fireplace, as covered and claimed by my Patent Application No. 37303, dated the 30th April, 1947. To those who may object the use of molasses for fuel economy purposes it may be mentioned that the production of molasses in India in 1944-45 was 4,31,000 tons and in 1945-46 this production rose to 4,33,000

tons, and only 50,000 tons, i. e., a negligible part of this huge quantity can be consumed by 9 existing distilleries, whereas the major portion, which at present apparently goes to waste, can be allotted for fuel economy purposes, mainly for preservation of irreplacable resources of coal.

4. *Loss of coal in dust form.* While raising coal from mines the formation of dust is about 20 P. C. and only about 10 P. C. of this quantity might be utilised. The remaining 10 P. C. being wasted as useless refuge. This 10 P. C. are equivalent to 2·8 million tons of coal per year, the loss which can be avoided by adopting the manufacture of briquettes (p. 247*). Be it mentioned that in a country like America, where resources of coal are supposed to last for nearly 6,000 years, the Government since long encourages briquette manufacturing. Same for England, France and Germany where about 2 million tons of briquettes are being manufactured yearly.

5. *Loss of coke dust.* Taking that 2 million tons of soft coke is manufactured yearly (p. 46*) the formation of dust is about 20 P. C. Only about 10 P. C. of this quantity might be utilised in making cow-dung and mud balls. The balance of dust that is lost, accounts for about 2,00,000 tons per year. This huge quantity can also be saved, if encouragement is given for briquette manufacturing, when the total saving of dust will yield about 3 million tons of coal per year, in varieties suitable for both industrial and domestic purposes.

By the courtesy of Mining Corporation Ltd., 21, Old Court House Street, Cal.
Reprinted from "Indian News Chronicle", Delhi, 16th April, 1947.
Panditjee in the Pavilion of AIMO Exhibition. On his right is the author displaying his inventions of Nuven and Briquettes. [P. 134.

Now coming to the question of scientific use of coal, it means in first instance the efficiency in coal utilisation, i. e., application of methods and processes which ensure complete combustion of coal together with prevention of loss to the atmosphere, waste heat recovery etc. And secondly, the use of up-to-date installation, in which fuel is consumed.

Scientific Use of Coal.

(1) *Railways.* Introduction of condensing installation to the existing locomotives can save from 15 to 20 P. C. of fuel consumption. In the U. S. S. R. the condenser locomotives run from 620 to 1000 miles without taking water, with effect of 15 to 20 P. C. fuel economy.

(2) *Steam raising in power production.* The boiler must be of good and modern design. If however obsolete types of boilers are to be used as is general practice in India, some sort of recuperators must be installed which can at least reduce the fuel consumption to 5 to 10 P. C.

(3) In fire-brick kilns, glass furnaces, foundries etc. waste heat should be utilised by installation of recuperators and regenerators, widely used by Europe and America. For this my Indian Patent Application No. 35327, dated the 14th September, 1946, is as well available.

(4) *Domestic consumption of fuel.* In Europe, England, America and Russia the domestic consumption of fuel goes mainly for heating purposes, cooking being only on the second place. In India heating

scarcely is needed at all and if so, then only in few places and for a very short time. Thus domestic consumption can be taken as almost exclusively for cooking purposes. Here the huge consumption of coal and other fuels can be reduced upto as much as 50% by introduction of scientific cooking ranges, suitable for Indian i. e., tropical conditions. Among such I have the pleasure to refer to my "Nuven", Patent No. 34092, dated February 16, 1946, already largely appreciated and recognised by no lesser personages than Pandit Jawaharlal Nehru and the fuel authorities of Bengal.

EXPECTED SAVING OF COAL

If the scientific and rational methods as pointed above are applied the following economy can be effected :—

1. Minimum 5 p. c. can be effected in iron and steel industries, which will release... ... 3,00,000 tons.
2. Minimum 5 p. c. economy can be effected in railways. This will amount to ... ... 4,00,000 tons.
3. In cotton, jute and paper mills from 5 to 10 p. c. economy can be effected, with conservation of... ... ... 3,50,000 tons.
4. Domestic consumption can be reduced by 20 to 50 p. c. Taking average 35% saving, this will amount to... ... ... 8,75,000 tons.
5. Consumption in operating collieries can be reduced by 5 to 10% with consequent saving of... .... 1,87,000 tons.
6. In fire-bricks and pottery works, the consumption can be reduced by 10 to 20 p. c. which will amount to... ... ... 3,00,000 tons.
7. In glass furnaces and lime kilns about 16% saving can be effected, which will amount to... ... ... 1,50,000 tons.
8. Saving effected by application of low temperature carbonisation... ... ... 30,00,000 tons.

Total saving... 55,62,000 tons.

The above estimation is based on very modest attainment, in minimum conditions. Here it is interesting to quote Prof. William A. Bone's "Coal and Its Scientific Uses", page 20 :—

"In regard to the realisable margins of economy in the coal actually consumed in the kingdom, the second Royal Commission on coal supplies reported in 1905 that the possible saving in our then annual consumption of 167 million tons amounted to between 40 and 60 million tons." The conditions in India to-day as regards utilisation of coal can be compared to that of England in 1905.

CONCLUSION

The principles on which the planning of consumption of coal will be based, may be taken as the following :—

1. The attainment of complete combustion of coal with minimum excess air wherever coal is used as fuel.

2. The utilisation of all the amount of heat thus developed for useful purposes, with minimum loss.

3. The complete recovery of by-products during the process of carbonisation of coal.

4. The use of proper grades of coal to suitable industries.

If these four scientific principles are adopted, the present consumption of coal can be reduced by 20-25 p. c. and in 1956, the production of 32 million tons of coal will serve the need in place of 41 million tons, as

proposed by the Coal-Fields Committee, 1946. A simultaneous campaign on two fronts—production and consumption—can solve our national problem. The demand for unscientific and irrational consumption should not be met with increase of production as this would mean waste of national wealth.

The scheme is based on present condition with minimum additions and alterations and without slightest interference with the routine work of the plants. Of course scientific measures always goes parallel with the increase of production as well as better quality of products.

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CHAPTER IX

TECHNICAL EDUCATION AND CREATION OF CADRES

England and America developed their science, industry and technique during last 200 years. Germany made her progress in 60 years. Japan took less than half a century, while Soviet Russia rose from extreme backwardness to the level of other advanced countries of the world within 3 five-year periods. Undoubtedly Russia took advantage of century's experience of other nations and added her own genius for wonderful achievements in practical field, on the new basis of socialism. Similar way is equally open to us. How long then it would take our mother country to rise to the standard of modern nations ?

Progress of Industry in Other Countries.

One would scarcely believe that only about 25 years ago Russia have been in the backward state as India appears to-day. How was it possible for Russia to develop her marvellous progress within such a short period of time ? The answer is the real methods of imparting proper education to the masses and thus creating worthy citizens and men and women, well conscious of their duties not only towards their own country, but towards humanity as well.

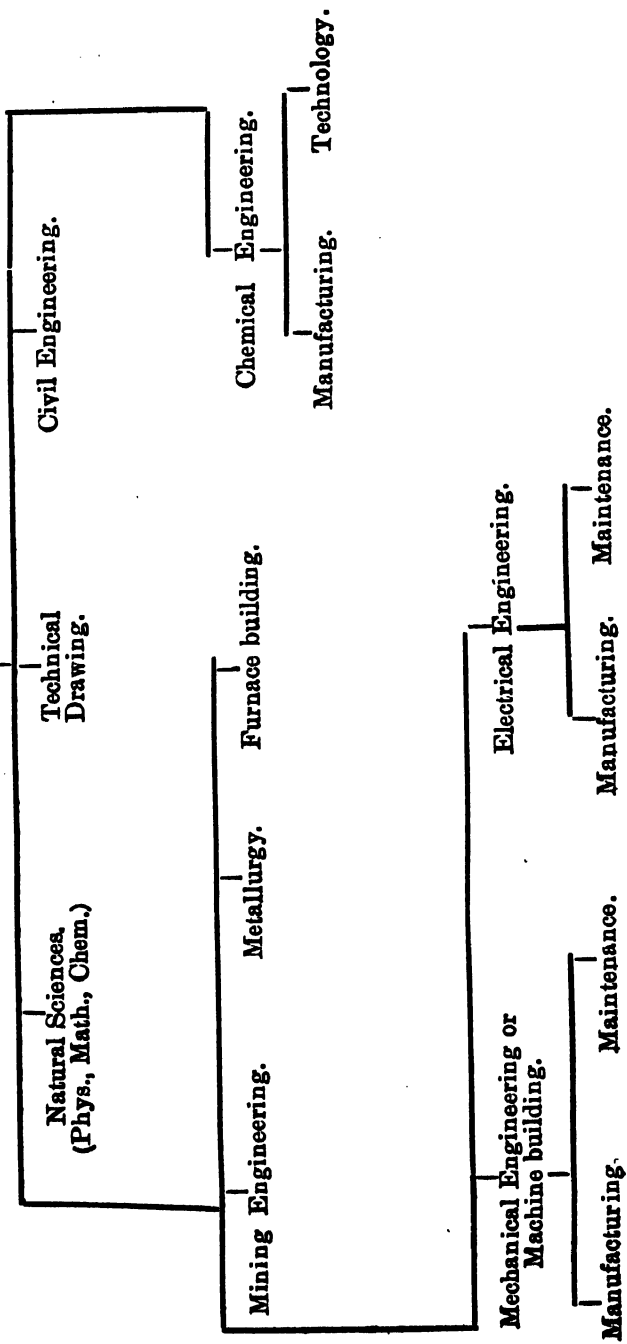
It is quite obvious that at present when almost all of the states are developing high standards of technique,

the problem of technical education here in India should be given serious and special attention. Before going to deal with the methods of technical education let us first have a glance at the very root of the same. The age we live in is an age of science, technique and technology, i. e., the age of machinism. The raw materials for the upkeep of this lie in the womb of mother earth. They are to be mined, metals to be extracted, coals to be partly extracted and partly gasified by the method of underground gasification (such methods are in use in practical work in Donbass, and other parts of the U. S. S. R.). The alloys should be prepared and so on. The materials being ready, next stage is to design and to construct the machineries for this or that manufacturing industry. Then to run these machineries and to maintain their operation. Thus we see that there are two distinct sides of technical education of every subject—the one creative, the other supervising. And as a tree has its roots, branches and leaves, so technical education has its roots, branches and leaves as will be seen from the chart No. III given below.

Present and Education.

If we analyse this chart and compare it with the present system of technical education in India, it will appear that this system is not only hap-hazard but quite in the reverse direction. This is evident in the case of development of science, industry and technique—first care, we may say it figuratively, was taken for leaves and

System of Education in India.

Chart No. III
TECHNICAL EDUCATION
Natural Sciences.
(Phys., Math., Chem.)
Technical
Drawing.
Civil Engineering.
Mining Engineering.
Metallurgy.
Furnace building.
Chemical Engineering.
Manufacturing.
Technology.
Mechanical Engineering or
Machine building.
Manufacturing.
Maintenance.
Electrical Engineering.
Manufacturing.
Maintenance.

branches, neglecting the root. For example, mill-production of cloth, i. e., weaving started in India first, then developed spinning, neglecting entirely the manufacture ot machineries which operate both spinning and weaving. If we study deeply the present system of education in Indian colleges, it will be clear that the very fundamental principles of training lie only in creating cadres for running and maintaining machineries, produced and imported from foreign countries. Of course my object is not to condemn the principles of importing from abroad some machineries vitally needed for our national industries, but we may limit such import merely to one unit of each variety of machinery and start our own fundamental or key industries for copying imported units and produce similar machineries of our own Indian make to supply further demands of our industrial branches. The matter is altogether easy as the patents of those fundamental machineries such as turbines, engines, generators, boilers etc. have long ago elapsed and no legal bar can exist against copying. As the matter stands to-day our Indian nation inspite of being one of the most intellectual and talented nations, is compelled to be dependent upon the labour and genius of other nations.

Some students may overcome this narrow limit, but there are several obstacles of which the following are the most important :—

1. *System of units*—

(*a*) It is so clear even to a layman that figures

10,000, 1,000 or $\frac{1}{10}$, $\frac{1}{100}$, $\frac{1}{1000}$ etc., i.e., the decimal system is much more simple, accurate and quickly realisable than any other multiple or fractional numbers.

(*b*) Measurement of weight by metric system, i. e., by milli-centi-kilogrammes, etc., is much simpler than pound, quarter, hundred-weight, etc.

(*c*) The same case is with the measurement of length. Foot, yard, mile etc., are hap-hazardly related with one another and hence are too complicated to operate. While metric system, i. e., milli-centi-kilometers etc., are too easy to apply in practical problems.

(*d*) Measurement of temperature by old system of Fahrenheit is too artificial and impracticable to be used in practical life to-day, while so easy perceivable and simple system as that of Centigrade is available. An arbitrary figure 32 for temperature of freezing water and 212 for that of boiling water are used in old system of Fahrenheit while in the Centigrade system 0° denotes temperature of freezing water and 100° that of boiling water, which is so easy to grasp, to learn and to apply in practical field.

Considering the marvellous speed of progress of science and technique during the last two decades, it is essentially necessary to discard foot-pound-Fahrenheit system and to adopt metre-kilogram-Centigrade, both for science and engineering. Moreover one would be simply astonished to face a fact that here in India even to-day Indian scientists and engineers are taught

in two different systems of units, which involves a useless hardship in co-ordination of work.

2. *The nature of text-books* :—

What are the essentials of a text-book in technical science? Suppose a text-book on some particular machine:—It should contain, apart from theoretical consideration, the following materials :—

(*a*) Dimensions of the apparatus in full details with particulars of different parts.

(*b*) Total cost of production with relation to the cost of design, material, labour and supervision.

(*c*) Full particulars of materials for construction of all its parts.

(*d*) Detailed specification under different conditions of work.

(*e*) Capacity, power needed for operation, temperature attainable etc. etc.

(*f*) Experimental results in the form of latest available data.

(*g*) All theoretical consideration must lead to simple arithmetical figures, expressing length, weight, time etc., so that a student on going through the book will be in a position to design and construct the object in question.

And what do we find in general text-books in India? Certainly there are good deal of exercises on differential and integral calculus and demonstration of laws of natural sciences no doubt, yet one scarcely finds any arithmetical data from which the actual apparatus could be reproduced. There is a number of

general views of different factories, photos of several machines which are nothing but the advertisements of commercial organisations.

Now, how a Russian professor composes a new technical text-book ? A good number of articles on his own latest investigations and researches, as well as the volumes of different authors in different foreign languages, different authoritative magazines and publications are collected on his writing desk. The professor draws the most important conclusions from all these materials, adds up-to-date experimental data, adds his own experiences and genius, so that a newly created book can serve as the best practical guide book for students in the colleges, for workers in the factories and workshops, creating for them a large scope for the new inventions, new advancements and achievements in their struggle for industrialisation of their country. Without being a practical guide, a book will not be endorsed by the Soviet Government as a text-book and hence even its printing will be out of question, as there is no private printing works. Studying such a book a Russian youth will be immediately fit for discharging a responsible practical job. Of course in the text of such a book we may also find the general views of different foreign factories, photos of foreign machineries. Yet these are shown not for purchasing but for mere encouragement of a pupil or a worker to create similar or even better machineries by dint of his own labour and efforts in order to "take up and overtake foreign technique" (*V. I. Lenin*). Here it is

interesting to mention that in Soviet Russia the titles of Professor, Doctor of Science, Academician etc. do not necessarily mean that a person being once awarded, gets the privilege of retaining his degree for the duration of his whole life. Nay, it appears quite essential that his or her activities will prove his or her merits for retaining it further. A Soviet Russian professor, after several years of activity, is called upon to show his new discoveries and researches, or at least some other comprehensive works, writings and composition essentially useful in the line of his subjects. A Doctor of Technical Science—his new inventions, investigations and practical conclusions, and an Academician—new studies in the region of Academic Sciences etc., so that along with the rapid march of time each of them will also advance accordingly and thus be fit to retain his respective post and degree or title and to render maximum useful service to the nation.

Under present circumstances, a revolutionary and thorough change must be brought about both in the subjects and in the methods of teaching in the universities and colleges of India.

(*a*) *Subjects*—Selection of the subjects of any particular faculty should be done carefully and in full harmony with the present-day demands of the society as well as training itself should provide a student with ability of undertaking independent and responsible work, when he finishes his studies and leaves the college or university. On the other hand, although

selection of the subjects is carried with a view to provide a narrow specialisation, the general broad development of pupils in no way should be cast into shadow. In an engineering college the foremost and fundamental attention should be given to the study of natural sciences and technical drawings, which will help the students to form a general idea of machines and furnaces, the essentials for study of all other branches of engineering as noted in chart No. III. The narrow specialisation can be acquired afterwards while actually on duties, and after several years of practical experiments, under the guidance of senior specialists in the line, can be brought to practical perfection. Such policy adopted in the U. S. S. R. proved to be of a vital success in almost every field of national life and there are several institutions started on the basis of this view, as Institute of Coal Chemistry at Kharkov and in Moscow huge concerns ; or Institute of Steel in Moscow, Communication Engineering Research Institute at Rostov-on-Don, Power-technical Institutes at Moscow and in Leningrad, etc. etc. Of course such a harmony between practical life and studies be created in Russia only due to peculiar structure of the Government where the whole capital is at the sole disposal of the state itself, where every sphere of activities is controlled and developed under planned economy, where cadres too are being created in accordance with plan and actual demands of life and thus everyone has provision for an employment and sufficient field for active work.

(*b*) *Methods of Training* :—The complete failure of *Laissez-faire* policy is obvious :—few multimillionaires, poverty-stricken masses, homeless wanderers, the recent destructive world war No. II are too bright and vivid examples. Even Soviet Russia with her fully re-organised policy could not keep herself aside from the bloody slaughter in the sorrounding of capitalist states. Indeed, the days of individual selfishness and egoism has proved fatal, it should be replaced by universal self-sacrifice and love, the principles which are proclaimed by Marxism, and of which our mother country India can be a true votary and even a leader. Also, in the present struggle for existence one individual can scarcely survive without collective support. Vladimir Ilich Lenin wrote in his book, "What is to be done ?", in his earlier years, in the exile abroad :—

"Unity has in every case arisen from historical conditions and has been carried out by methods varying with circumstances of *time* and *place*."

Unfortunately for so long, in the grip of colonial subjugation, we were deprived of the possibilities of uniting ourselves for common welfare, so that it is now high time that the spirit of fraternity and unification be imparted to our younger generation through educational institutions provided we can substitute present hap-hazard system of education with broader and more national programme. Here, only a few points in connection with the methods of training will be dealt with, just to give an average idea.

(*a*) *Individualism* should be merged in common cause and the pupils should be made accustomed to this idea from the early days of their studies. For example, here in India when a student stands first or second in an examination he gets reward and honour or distinction. His joy and pride are those of the egoistic form. In Russia, a student of outstanding merit will be selected as a captain of a particular group of 10 to 15 of his other comrades by the class and will be responsible for the success of the whole team in final examination. He will practically be the leader of his group or team throughout the course of the study, will be liable to help each member to achieve some success, will give necessary explanations, repeat the lectures delivered by professors, if so desired by his team etc. And a captain who has made sufficient efforts for common interests of the team may only be considered to be the best boy of the class. The results are obvious :—noble sentiments, self-sacrifice and fraternity remain the distinct features of the man long after his studies are completed. This provides an answer for a unique victory Russia had scored over Hitlerite Germany.

(*b*) *Old methods of teaching by terror* should be replaced by comradely feelings and mutual understanding between teacher and the taught. A patriotic ambition to serve mother country to the best of ability and strength should be awakened among the students—in this lies the greatest responsibility of the teacher. The aim can be achieved through

non-egoistic system of training and proper conscious class-discipline. All this should be emphasised by the fact that the students must be well convinced about immediate practical application of their knowledge and experience acquired in the university or college. Nothing gives greater strength to a man than a confidence of a man, responsible and steady work for the sake of the real welfare of his nation.

(*c*) *The teaching of Theoretical and Abstract Sciences* :—There remains scarcely any abstract subject in days of intense technical progress, which has no wide application in the practical field. So the teaching of these subjects in no case should be limited only with theoretical explanations. City museums, workshops, and aerodromes can be utilised as demonstration laboratories.

(*d*) *College Life* :—A period of 4 to 6 years of student life in educational institutions should be so utilised as to prepare the worthy citizens of the country. The following methods of making self-promises, which proved of such a striking success in the U. S. S. R. and has created the most patriotic enthusiasm among the student masses, may be introduced here in India. A rough sketch of an application form of a self-promise is given below :—

Student's Application Form to enter into Socialistic Competition.

1. Name of the Institution..
2. Name.......................Class...............Group...............
3. Subjects....................Special interest in...................

Self-promise

I,...................................., solemnly promise to fulfil the following duties and to be faithful to the following discipline in order to train myself to be a worthy citizen of my mother country.

Compulsory to every student

1. Punctuality in attending duties.
2. Cent per cent attendance of class lectures.
3. Cent per cent attendance of group meetings.
4. Cent per cent presence in general meetings.
5. Social Service—(*a*) internal and (*b*) outside the College.

Optional

(*One or some of the points to be selected by individual students*)

1. Improvement of qualifications other than college study :— Different languages, studying of subjects higher than college standard, motor driving on land, water and air too.
2. Sports :—shooting, riding, swimming etc.
3. Leading of the group :—to help the incapable class friends to work up the lectures in organised way.
4. Music, dramatical acting etc.
5. Contribution in the wall-newspaper or in the college magazine.
6. Entering into debating competitions.
7. Organisation of excursions and summarising the results etc. etc.

* The Structure of Soviet Educational System

(Adapted from Prof. Pinkevich)

<table>
<tr><th colspan="4">Education of Children and Youth.</th><th colspan="3">Education of Adults.</th></tr>
<tr><td>From Birth to 3 years</td><td colspan="3">Creches. (Under the Commissariat of Health)</td><td colspan="3" rowspan="2">School for the Liquidation of Illiteracy.</td></tr>
<tr><td>3-8</td><td colspan="3">Nursery and Infant School. (Under the Commissariat of Education)</td></tr>
<tr><td>8-12</td><td colspan="3">Primary School (Under the Commissariat of Education)</td><td colspan="2">Adult School of first grade.</td><td>School of Political Literacy.</td></tr>
<tr><td>12-15</td><td>1st Division of Secondary School.</td><td rowspan="2">Factory Apprentice School. (Under the Comm. of Industries.)</td><td>School of Peasant Youth.</td><td>Worker Faculties.</td><td>Adult School of second grade.</td><td>Soviet Party School of first grade.</td></tr>
<tr><td>15-17</td><td>2nd Division of Secondary School.</td><td colspan="3">Techniqum. Art, Music, Eng'g., Medicine etc. (Under the respective Commissariats.)</td><td>Soviet Party School of second grade.</td></tr>
<tr><td>17-22</td><td colspan="6">Universities and Higher Schools.</td></tr>
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</table>

* Vide N. P. C. Series (Education).

CHAPTER X

WOMAN AND COUNTRY

(By Mrs. Tatiana Shaha-Sedina)

Woman is a tremendous factor in the national planned economy. In a country with a small population, striving to achieve all aspects of the modern progress, an adequately educated and socially conscious modern woman, unhandicapped by various ridiculous restrictions of inequality of her rights is capable of providing the potential resource of working power in almost all the spheres of socio-national life. This we see in the case of such a small but advanced country as Czekoslovakia. This we see, on a much larger scale, in Soviet Russia, with her problem of inadequate population—that of 175 millions on a territory 6 times as big as India,—which would never let her achieve all her success on the strength of male-power alone. Both the examples are speaking by themselves that it is worthwhile for every Government to pay due attention to the problem of education and emancipation of the womenfolk of their respective countries, drawing them as an additional force towards building the prosperity of the nation.

Woman and Planning.

But even in India, where owing to the fact of over-population, the question of utilising the working power of the woman on the national scale

does not arise at all, where only the adult male are providing more than sufficient cadres for all conceavable aspects of constructive activities and where it seams that a woman can securely stay back in her kitchen and serve the needs of her family alone—it is yet imperative to bear in mind that only an educated, socially conscious and self-respecting woman can be looked upon as an worthy mother of the future generation. Nay, that only such a woman has an adequate capacity to instill the true and honest national spirit into her youngsters, the future builders of the country.

Thus emancipation and correct education of the woman, even if she is not to be drawn into the working cadres for the present, the formation of her psychological make-up on the new lines of freedom, self-respect and equality, is a problem of as much national importance as any other branch of national planning. Indeed, as pointed out by our great Lenin, it is essentially home and hearth that are moulding the early psychological make-up of the growing generation, and it is the mother who is ruling supreme in this hearth and home. Consequently, socially conscious educated woman, invested with all the privileges of equal rights of citizenship, would provide an asset of inestimable value for the nation, far surpassing every conceavable institutions of social education for producing consciousness of citizenship amongst the people.

Again, apart from being powerful and stimulating

factor in re-vitalisation of the national spirit, an emancipated and adequately educated woman would provide an inexhaustible source of reserve in the case of any national emergency.

Dead Souls.

Now-a-days it is of course a fashionable talk the world over that modern woman should be emancipated, should take active part in general progress of the nations. Yet it is nothing but a mere talk. Suppressed and over-trodden by generations, especially, in the East, woman cannot become free by the mere adjustments of the existing laws. Neither imperialist law, with its background of religion—which in itself is assigning to a woman position of an inferior—can afford to give a real help to the woman to break the chains of her prolonged slavery. Meanwhile the example of women who would rise to their glory, notwithstanding limitations of the men-created laws, are various and many and they are sparkling like jewels on the pages of general history of mankind. Women-scientists, amongst them such an outstanding figure as Madame Maria Curie, have displayed greater than men, devotion, patience and sacrifice for the sake of their work. Women-literators, such as Selma Lagerleff, Pearl Buck, Charlotta Bronte and many others, have shown perhaps more subtle study of human nature, while women holding in their hands the reins of kingdom, such as Catherine the Great, the autocratic Tzarina of Russia, or Victoria, the all-wise Queen of England, have

displayed such courage, determination and foresight, which appertains but to a few amongst men. Yet all those facts failed to afford a woman her due place in the society and her due human rights.

Even in to-day's Europe woman, having all outward show of respect and equality, scarcely enjoys them in real life. In the case when legislature is backing her rights, she seldom, save few examples, is possessing economic idependence to exercise them, in as much as she has no additional privileges to compensate for her natural weakness and handicaps.

With all this, I believe, that my kind readers will agree that whatever woman is to-day in general, with all her drawbacks and shortcomings, is what man has made her to be, not what necessarily she could or ought to be under different circumstances. Of course there always have been,—as there are now—men with progressive mind, who realise that woman is not only an inferior being, but with proper facilities given to her—she can be quite as equal and important a partner in constructive work and general progress of the society. A vivid and startling example of this fact—and not merely an example, but a worked-out plan how to carry it into reality—is provided to the world by my great mother-land Soviet Russia, where the emancipation of woman took place on a nation-wide scale. Yet, before introduction of the new Soviet laws the position of woman in Tzarist Russia used to be most appalling. "Chicken is

not a bird, woman is not a human being" used to go an ironic proverb in the interior of Russia. Meanwhile long before revolution, Russian great democrat and critic Chernishevsky in these few touching and powerful words mourned the position of woman in general, and especially of a Russian woman :

"With what a true, powerful and penetrating mind Nature has endowed woman. And this mind remains of no use to society, which spurns it, crushes it, smothers it, although the history of mankind would progress ten times as rapidly if these minds were not spurned and killed, but were exercised."

Voice of Lenin.

And here I am glad to add that in the U. S. S. R. at present, the mind and abilities of Soviet woman are exercised in the interests of the society and ultimately in the interests of woman herself.

The Soviet constitution relating to the position of Soviet woman runs as follows :—

"Women in the U. S. S. R. are accorded equal rights with men in all spheres of economic, state, cultural, social and political life.

"The possibility of exercising these rights is ensured to women by granting them an equal right with men to work, payment for work, rest and leisure, participation in sport, social insurance and education, marriage and divorce laws, and by state protection of the interests of mother and child, pre-maternity and maternity leave (35 and 28 days respectively, with full

pay) and the provision of wide net-work of maternity homes, nurseries and kindergartens."

The position which Russian woman holds to-day sharing equal rights and equal responsibility with male partners of her great nation, was made for per possible only through keen and firm efforts of Vladimir Ilich Lenin, who immediately on assuming leadership, had declared that it was practically impossible to make a nation free and progressive, unless "our mothers, sisters and daughters were made educated, free and responsible. Then and only then shall we be able to bring up a new generation, who would not lack courage, self-sacrifice and heroism to defend our new laws of Humanity, Liberty and Equality."

The just appreciation of woman's fine inborn qualities by Lenin bore the fruits in his very life-time—his dearly loved wife and comrade-in-arms Nadejda Constantinovna Krupskaya, who in pre-revolution period shared his work and his exile, shortly on his assuming leadership, became People's Commissar of Labour and continued in this office till her death in venerable age, long after her illustrious husband was no more, while his younger sister Maria Ilinichna Lenina died on the post of the Chairman of Soviet Control Committee in whose jurisdiction it was, and is up to now, to take up any case of sabotage or illegal pronouncement of the court, as well as to supervise any branch of national economy where something or other had gone amiss.

Neither this appreciation was born in Lenin's mind

just on theoretical grounds—nay, from his very youthful career as an inflinching and staunch revolutionary, he was surrounded by women co-workers, whose devotion, capacity for work and sacrifice for the sake of revolutionary organisation—astounded him and invoked his deepest respect and admiration. On achieving his aim in overthrowing autocratic regime, Vladimir Ilich hastened to make position of women in Russia equal to the greatness of their mind.

Thus was born Soviet woman—a new woman in history of mankind, a woman free, conscious and responsible, and the example displayed by Soviet women, whether in Science, Industry, Administration or even on the Battle Field (as approximately 15 per cent of Russian Army consists of women, who unlike men are not conscripted but are volunteers)—as well as rapid and striking progress of Soviet Russia as a whole—have amply proved to the wisdom of Lenin's policy to emancipate the woman and thus to utilise tremendous balast of approximately ½ of the population for constructive work of the country—as what short of a balast are those timid, smothered creatures—women, possessing no human right, no light of knowledge and no dignity of self-realisation ?

The Price of Freedom.

But if in the Great Russia itself, i. e., Russia comprising the Central Provinces,—such liberation of women passed off more or less smoothly and without much resistance and Russian man, particularly Russian "Mujik" —patient, docile and hardworking peasant—had

taken it, at first, as an inevitable evil and punishment —in the parts of Asiatic Russia it has taken a truly dramatic turn. Imagine a Mussalman woman—as majority population in those parts of Russia, such as Turks, Tartars, Uzbecks, Sarts, Khirghiz, Tadjiks etc., are Mussalmans—imagine such a woman, with her face veiled by *purdah*, with her husband to whom she is sold in slavery as his 1st, 2nd, 3rd or even 4th wife, or with her father and brothers, who scarcely feel her more than a servant of their conveniences and later on—an object of sale—a woman who was considered so beneath any standard of human privilege, that she was forbidden to sit at the table and to partake of her meal with the male members of the family—is it not a striking resemblance to what we now see in the interior of India ?—and imagine what a bomb-shell would be the new Soviet Law of Liberation to such a woman ! But even to Soviet leaders themselves it has come as a surprise with what reckless courage and determination the Muslim woman, Eastern Russian woman—had responded to the call of the law, introducing her into a new freer and happier life. With what tenacity she had clung to it and what heroic struggle she put forth to win the rights given to her by Soviet constitution and to turn this long and timid dream of freedom into the fact of reality.

The example of wives, being slain by their husbands, for throwing aside *purdah*, or joining the stage of national theatre, or daughters murdered by their

fathers for going out to schools or disobeying the mandate of forced marriage—are innumerable, yet they failed to break the valiant courage of Eastern woman, who fought her freedom through blood and peril.*

Neither was there lack on the part of special committees for liberating women—so called "Jenotdels", which were set in all parts of Russia and in special strength in Asiatic Russia—to come to the prompt assistance of her who was in need of it, and who would find some means to inform the committee of her plight. Such committees were comprising many local women-workers, which immensely facilitated to establish contacts with the local oppressed womenfolks. Whenever on the summons of an S. O. S. call, it was found to be already late and the appellant happened to be silenced by the knife—the reprisals taken against guilty, generally man,—were without

*The shortage of time forbids me to cite the examples, which are otherwise most vivid, heroic and appealing. Those who are interested in particulars may refer to my Article entitled "Soviet Women" published some time ago in *The Amrita Bazar Patrika* where they may read short sketches on the life of Tamara Khanom, now a great dancer of Uzbekhisthan—who was the first Muslim lady led on to the stage by her young Communist cousin Muksum, a dancer himself—to the accompaniment of loud cheers of the younger part of her male audience and stone-throwing of the old—it being customarily forbidden to the Eastern woman not only to make performance on the stage, but even to participate in any kind of public gatherings or amusements.

No less appealing is the story of Khalima Nasirova—a successful, young drama-actress, who had been slaughtered by her husband—a man liberal in mind and loving too, but who was unable to stand the slandering tongues of the neighbours—as in public opinion an actress was considered to be nothing less but a public woman.

mercy : life for life. Thus the law of liberation had prevailed in as much by strictness of the Government Authorities as by the courage of women themselves.

And not to speak of Central Russia—look at Asiatic Russia to-day, with its happiness, its songs, its prosperity, its wide industrialisation carried out as much by the efforts of women as by those of men—land that is proud of its free and heroic daughters, amongst whom Mrs. Qubra Faradjeeva holds a position of the People's Commissar (similar to a Minister) of Public Health of Azerbaijan, and Mrs. Bakthy Altibaeva—that of the People's Commissar of the Light Industry of Turkmenisthan.

I have had a chance to come into contact with some of these newly free women, and I vividly remember an old peasant woman—Uzbek and Mussalman—who on my question how it fares with her then, had smiled and said that it was a pity Soviet Government did come so late. Would the law of liberation come earlier, all villagers would run to have a look at her face—she was a beauty when young. And now she was but an old crow,—which nevertheless does not mean a useless member of the society.

Three-edged Sword.

What were then those practical steps that were taken by Soviet Government to bring about such tremendous change in the status and social position of the woman ?

The task taken up by the Soviets was covering simultaneously 3 directions :—

(1) Creation of such administrative laws that

would place a woman on equal footing with men in every sphere of her life and activities, including administration of the country. These laws provided Soviet women with equal right for education and for work in any line she would care to choose according to her inborn abilities, thus abolishing traditional "men's jobs", the way to which was barred to women.

(2) Provision of work and facilities for education, including universities, for every willing Soviet woman on strictly equal basis with men, i. e., equal pay for equal labour, equal 7-hour working day, equal leave, right of getting free permit to special rest-homes and health-resorts, right to participate in sport and in the administrative jobs, as well as equal rights to receive public honours for outstanding merits of work and study. All these ensured full economic independence to a woman and eventually all necessary means and opportunities to exercise the rights given to her by law. Add to this liberal laws on marriage and divorce and the fact that children by the rules of the state belong to the mother—and you will appreciate how free a woman can be under these conditions! And how much of her time usually spent on brooding over her misfortunes and miseries—can be profitably devoted for the welfare of her nation!

(3) Creation of all kinds of special facilities and privileges for working woman, that would compensate for her natural weakness and handicaps and would automatically place her on equal footing with men. This includes maternity and pre-maternity leave with

full pay, in addition to regular yearly leave, and wide net of nurseries and kindergartens, where working mother can leave her child in the care of competent staff for the full working day, on a nominal charge—a fact that has led to the circulation of wild rumours outside, that family life does not exist in Russia and all Russian children are the property of the state. Of course Soviet children are the property of the state in as much as the state is responsible for all facilities of their healthy and correct upbringing—yet they entirely belong to their parents, so far the happiness of a family life is concerned. One remarkable fact —there are no illegitimate children in Russia !

To emancipate woman from her household slavery and to enable her to do more useful work—numerous factory kitchens, Government dining rooms and catering establishments were opened throughout the U. S. S. R., and as early as 1939 their number reached well above 30,000. In addition, ready-to-cook stuff, in the form of salads, cutlets, sandwiches, cleaned and cut vegetables—are being sold in all Government food stores. Also there are a number of Government mechanical laundries with delivery of linen to the doors, if so desired.

From Darkness to Light.

As a result of all these measures the U. S. S. R. to-day prides itself in possessing numerous women engineers, scientists, physicians, flyers and executives, who are making more than usual contributions towards the constructive work of the national plan. In a

word, there is no such branch of Soviet economy, where there would not be lot of women-employees, who would take most lively interest in any nature of work in which they are engaged. There are now as many as 189 Soviet women in supreme administrative apparatus of the U. S. S. R. and amongst them 12 are holding the responsibilities of the People's Commissars of various branches of national economy.

There are more than 1,00,000 women engineers and technicians in the U. S. S. R., while in all other countries of the world combined together there are scarcely 10,000 women engineers. There are over 12,000 women scientific workers in the U. S. S. R.

Soviet women flyers, as yet unsurpassed in their heroism and their mastery of the air, such as Valentina Grizodubova, Marina Raskova and late Polina Ossipenko who died a heroine's death in her recent war flights—all of them were rewarded with Stalin's Order (the supreme public honour in Russia) for establishing a long-distance-non-stop-flight record for the women—are exciting admiration of every state and nation of the world.

In collective Soviet agriculture again, there are so many women tractor-drivers who on these "men's jobs" have by far surpassed their men-colleagues, both in efficiency and skill and sincerity of fulfilling their task. As a general addition, it may be said that Soviet women have shown themselves to be much keener than man in every kind of labour competitions,

as if they were purposely trying to show how great injustice was done to them in the past.

Soviet woman is very keen to participate in the sport—and Government provides her with all facilities to do it on equal footing with men. There are now many Soviet young women-workers to be seen in the streets of Soviet towns wearing badges of G. T. O., i. e., "Ready for Defence and Labour", after they have passed their training and physical test of fitness in the Institute of Physical Culture. This fact of course renders a Soviet woman to be as prepared and qualified to stand up for defence of her country as her male partner. Here we may draw a parallel with the Great Sokhol Movement in pre-war Czechoslovakia—a movement that has laid physical culture as the very basis for both physical and moral regeneration of a nation. A fine and broad picture on the significance of this movement and its influence on the life of Czechoslovakia may be found on the beautiful pages of "We Shall Live Again" (the people of Czechoslovakia)—by Moris Hindus.

Another startling example of what an important part may be played by sport in strengthening and lifting up the woman and adding her efforts to the defence of the country, is provided by Japan, where a miniature and tiny modern Japanese woman—before only a doll of a *Geisha*—is now very often as fit and fine a sportsman as her male partner in almost all the branches of games and sports, including that of military exercise. Thus it is no wonder that during

the last war we heard so many rumours of fighting squads of Japanese women or of women suicide-pilots, who braved the danger and death with defiance no lesser than men have shown.

But over and above, Soviet Government recognises the enormous role and responsibility of a woman as mother of a future generation, not however recognising that this must necessarily hamper her abilities to participate in constructive work of the country, and make out of her only a child-producing machine. We have already surveyed all the facilities that are granted to Soviet woman in this light, facilities which she gets during her work as well as in the way of relief in caring after her baby. It remains to add about special benefits which are being accorded by Soviet Government to the mothers of large families, whether they are Government employees or just private housewives, in the cities or in the agricultural farms. On the birth of her seventh child Soviet mother receives a benefit of two thousand rubles (1 ruble being approximately equivalent to 8 annas in practical life), every year until the child is 5 years of age, and the same amount on the birth of every subsequent child. Mothers of ten children receive five thousand rubles annually on the birth of every subsequent child until the 6th year of the child when she can already be placed in the kinder-garten or in a school, on nominal charge, and when Government themselves will look to his correct upbringing, as well as to his health—medical service in Russia is accorded free of charge to every Soviet citizen.

But perhaps the greatest boon of all in the way ot liberation of the woman came Soviet legislation on marriage, whereupon the registered marriage could be broken at any time by the wish of the woman herself, without necessitating the consent of the husband (and of course vice versa) and the children by the law of the state being recognised as irrevocably belonging to mother, although father is made obliged to pay the expense of their upbringing till their 16th year and only with the consent of the divorced woman in some cases, a father may have his child to himself. The amount of the child maintenance, so called *alimony*, is determined by the state, to run from $\frac{1}{3}$ to $\frac{2}{3}$ of father's salary, according to number of the left children. The amount of alimony is being cut from his salary by the Government organs themselves—as every man is bound to be in some or other capacity a Government servant—and subsequently transferred to the divorced. If no child, husband may abandon his wife without being liable for alimony, provided she is healthy and capable to work and earn her livelihood for herself.

New Life.

Thus it may really seem that in framing its new constitution, Soviet Government have not only emancipated woman, but have granted her favour and privileges with great partiality. Yet any other state or country which would be aiming at liberating her womenfolk and afterwards utilising their full ability for the benefit of the nation, would do well to follow the example and plan of Soviet Union, keeping well in mind that only Lenin's

three-way policy can yield any practical result, as neither legislature alone, nor economic independence, nor even lack of proper facilities to safeguard the woman from effects of her natural weakness—can really liberate the woman, lift her from humiliating position of an inferior and put her into a status equal to her male-partner in the society, so as to leave her free field to participate in the constructive work of her country.

Indeed, I have had an opportunity during my long sojourn in India to come into contact with some working Indian women, cooly class of women, who earned their livelihood by the sweat of their own brow and who nevertheless deemed it their duty to submit their daily wages to the man—father, brother or husband —whom they sincerely believed to be their *malik*, and who on the strength of Indian legislature, is really their malik.

It goes superfluous to say that with such legislature as exists in modern Russia for safeguarding the interests of the women, prostitution—this leprosy on the existence of the international womanhood—had been completely wiped out. It has died of itself, due to economic independence and awaken pride and self-realisation of Soviet woman, who had shaken off this shame of her past, just like one throws aside a tattered garment which is of no further use. Neither there are children who would bear the terrible seal of being illegitimate—no, everyone who is born into this world,

is being brought up with love and care to be a useful member of the new classless society.

Yet, with all this I would venture to say that moral standards of Soviet society are better than those of the continent, there is better realisation of civic and parent's duty, there is even lesser number of divorces as compared to England, where in addition, in majority of cases these divorce-procedures are being dragged in all their ugliness before an open civil court, while in Russia they are being performed just in a Registration Bureau, as a private affair concerning none but the interested parties or even one party.

As to the morale of Soviet woman—it was sufficient to make out of her heroine, fighting on the battle field for her motherland in recent onslaught by Germany—and heroine on the mass-scale—and not just a few cases for loud applause of the international press.

Russia Calls.

And now, standing on the threshold of her new socio-economic order, what is India going to do, to liberate millions of her womenfolk from the age-long oppression by man and to utilise these dead souls for constructive work and uplift of the nation and country itself ?

All of us mentioning with admiration of such illustrious daughters of India as Mrs. Vijaya Lakshmi Pandit, Mrs. Aruna Asaf Ali, Mrs. Sarojini Naidu or Kamala Devi Chattopadhyay, whose lives are devoted to the cause of their country. Yet it were not only their fine inborn qualities alone that helped them to rise to their respective positions and complete personal

freedom—but also proper facilities of education and upbringing and, the most important factor of all in capitalist structure of the society—backing of a liberal-minded man, whether father, brother or husband. Whereas in Russia there is backing of law, complete economic independence and special privileges. What is being given to the woman the world over just as a favour—let it come even from dearly loved ones—is being given to her as her birth-right by the *Red Letter* of the Soviet law.

Nor a few however outstanding examples can help much for the cause of liberation of the mass of women who are forming now the inert portion of Indian's broad population.

Yet, we do not see that there are any particular difficulties to bring about the awakening of Indian woman, to make her conscious and free, as however backward India appears to-day in her interior—and I personally visited many interior places of India—Russia, in Tzarist time in her broad masses of peasantry, was scarcely less backward, less illiterate and, so far her eastern regions were concerned, scarcely with lesser amount of slavish mentality, than India.

We are also quite confident that Indian woman, with her sensitive and richly endowed eastern mind—is not lacking the essential qualities to raise herself to the same standard of self-realisation and importance, as Soviet woman did, provided there will be proper lead and support of those who are holding the

keys of administration and are responsible for shaping destinies of the nation.

To our comrades—Indian leaders—we may again humbly propose not to minimise the importance of Lenin's 3-way policy, laid in short on the previous pages of this chapter, policy that is all-prevailing for bringing about complete liberation of woman and making her an asset in the way of national uplift.

It also appears to us, on the strength of the example set by Soviet Russia, that only through combined creative efforts of all the citizens of India, men and women, sharing equal responsibility born out of equal right can be built a new, free and prosperous India.

Wither Russian Policy ?

One may however ask with surprise how it would be possible to apply the rules of Soviet legislature for the amelioration of the rights and status of woman in such a backward and disorganised country as India to-day, when not only the womenfolk but even men at large are facing problems of unemployment and semi-starvation and when a woman, it seems, has no better choice but to fulfil in slavish submissiveness her household duties and the duties of raising a poorly nourished and still more poorly educated generation?

The answer is simple:—give every woman the capacity to earn, by educating her for an intellectual job, or by teaching her some kind of regular profession or handicraft, so as to give her and the menfolk of her family a sense that, like a man, she too can be

independent and self-supporting, if necessity arises—then her status will be raised automatically, her self-realisation will be an accomplished fact. And this will affect beneficially not only the woman herself, but also the new generation of which she is the mother, for it is almost impossible that an enslaved and ignorant mother can bring up brave, honest, strong-minded and worthy sons and daughters.

Indeed, a glance over the country-side of India will reveal to any keen observer a rather gloomy picture, which again is only the result of age-long enslavement of the Indian peasant-woman, in much the same way as the woman of the upper class of Indian society. Far from being valued and respected by her husband, who exercises over her the right of implicit ownership, scarcely having any right in the legislature, the Indian woman is not respected even by her own children, particularly her sons, in whom in turn she is unable to instill the sense of respect. As for the daughters,—timid and vexed into indifferent submissiveness from the very days of their youth and destined but to be sold into marriage—the Indian girls do not count much in the life of a family. Can we then expect them to be really good mothers, in the sense of bringing up the worthy citizens of the nation ?

A contributory factor towards the miserable position of Indian woman—of the peasant-woman in particular—is that, at least in large portions of India, she has no useful work to do. Besides cooking meals and giving birth to numerous rickety babies—the

fact that constitutes another danger of over population, as well as exhaustion of the mother herself,—she idles lot of her time away with absolutely no purpose. This is rather in striking contrast with the peasant-women of the continent, who take active part in all field works, manage, all by themselves, to supply with fowl and milk to the adjacent towns and are busy with lot of other occupations, thus acquiring self-respect and a voice of their own, notwithstanding legislative restriction of their rights. Similar was the case with the hard-working, dutiful and diligent peasant-woman of Tzarist Russia, who by dint of her labour, some time harder than that of a man, literally battled her way into some kind of respect and recognition and who knew how to be the esteemed mother of her sons and daughters.

Meanwhile, the position of things in India to-day, could be certainly righted, as even in the remotest corners of India there is a definite trend, or rather a whispered hope amongst Indian womenfolk for a more useful existence and some kind of elementary freedom.

Should there be a sincere effort, combined with strong will, on the part of the administrators of India, we believe that a great deal in the way of re-education of women and their introduction into the useful vocations of constructive life—could be done within a short period of time, and the expenditure involved could be managed to be of non-recurring type. Indeed, as it was done in many branches of Art and Industries in Soviet Russia, both in European and Asiatic parts—

such education and training could be easily carried out free of charge on the basis of return-fees. A network of educational and training centres for women is to be set up in different parts of the country and every woman-student, in return for her training, could be made to perform some definite amount of useful and obligatory work, with which she could be charged by her training unit. For example, a trainee-typist could be made to type, a definite number of pages for any public enterprise, through her training unit, the remuneration for work going to the funds of the unit, as compensation for free training. A woman, learning embroidery, could be made to produce a definite amount of embroidered articles for sale, solely for the benefit of her unit, and so on. As an attraction for the families to send their women for such kind of training, the trainees, on completing their obligations, could be as well provided with some kind of decently remunerative and short-term jobs. Not so many vacancies would be required, as such uplift and training could be done, in Indian conditions, gradually, and the jobs, after expiration of the short terms, would successively pass from one trainee to the other. This would be a kind of a vivid demonstration, displaying to the society the capacities of the woman and giving her some definite moral status and concrete social value. As freedom does not necessarily mean only enjoying privileges, but also sharing of responsibilities —a fact which not every Indian woman is aware or conscious of.

Back to their homes, the trainees can easily maintain their acquired knowledge by continuing their work privately at their leisure and this will give them also some occasional earning. In the case of intellectual workers—their knowledge can be retained and developed by keeping in touch with literature on their respective subjects. And for this purpose small circulating libraries would be of immense value. They can be organised even on the basis of donations, as this is certainly no lesser an object than the raising of a memorial to a saint or to a leader.

Thus the cadres of the women-workers for the need of the country would be prepared with comparative ease, while the difference it would make for the cause of raising up the status of the woman and changing the whole psychological make-up of the nation, would be tremendous.

CHAPTER XI

CHILD AND NATION

(By Mrs. Tatiana Shaha-Sedina)

After emancipating woman through labour, as well as through legislature, after making her working or, at least, a potent member of society, another grave and important problem that, in this age of science, machinery and planning, would face the Government of any country with evident overgrowth of population and resulting poverty, ill-health of the nation and inadequate care in upbringing younger generation—is birth control and child welfare.

Birth Control as a Means of Child's Welfare.

The former is rather a delicate question and the ways and means of its introduction among the masses must necessarily vary according to prevailing conditions, as well as the general psychological outlook of the people concerned.

Certain specific conditions in a life of a nation may however be of a paramount importance to compell the Government to pay its special attention towards the problem of birth control and to adopt at large introduction of some methods, which in other circumstances might be considered illegal. And it appears that such specific conditions are present in India to-day, if to surmise that the growth of population in this country is going on at the rate of 5 to 6

millions a year, without any apparent hope of immediate increase in production or income.

There is a very illuminating passage in the Presidential address of Sir Vishesvaraya, delivered by him on the 8th annual conference of the All-Indian Manufacturers' Organisation at Eden Gardens, Calcutta, in which is given the statistical data of the growth of population in India :—

Year		*Population in Millions*
1901	... ...	294
1921	... ...	318
1931	... ...	338
1941	... ...	389

"This rate of the growth of population," remarks Sir Vishesvaraya, "threatens to cause a progressive lowering of standard of living bringing with it distress and misery to parents of large families in future generations. The subject of the growth of population should receive special study in every region. In western countries the necessary knowledge to restrict population is supplied by Government by establishing birth control clinics in public hospitals."

"There is a planned parenthood federation in nearly every part of the United States of America, whereas in India, at the annual conference of Indian women held in the month of December, 1947, in the city of Madras, the women themselves advocated the introduction of birth control."

In Russia, with its vast territories and population, which may be considered to be rather thin, birth control was universally introduced immediately after

the Civil War, when economic welfare of the country was completely shaken and smouldering ruins were almost the sole heritage left to the new Soviet Government. Accordingly, economic condition of every individual Russian family used to be such that a woman, just emancipated by the new Soviet laws, drawn into active work for re-building the country and semi-starved in the long process of revolutionary struggle, could not afford to bring up unlimited number of children. And Soviet Government did not want to have as many diseased waifs and vagabonds, that would grow up casually, all by themselves, in the most unfavourable circumstances and would never be fit to constitute the ranks of a healthy, responsible and disciplined nation.

Consequently, birth control medical units, chambers and stations were established all over the vast territories of the Soviet Union and as a rule such stations were being combined with the mother and child welfare corners, and were often attached directly to maternity homes under the label of prophylactic units.

Birth control met with enthusiastic and universal response and even the broad masses of Russian peasant-women outgrew their traditional fear of God and sentiments of religion, under temptation of offered facilities, in which, by that time, they sow some solution of their difficulties and miseries.

The extent of birth control went so far that even medical abortion in the form of surgical interruption

of pregnancy, upto two and a half months, i. e. the period when such abortion constitutes no direct danger to the would-be mother herself were permitted to any woman, who was unable or unwilling to give birth to a child. Such abortions were being performed by the registered Government doctors, under strictly sanitary conditions in hospitals and on a nominal charge; over and above, women at large were being taught the use of all up-to-date physical and chemical methods to guard themselves against undesirable pregnancy. The latter methods are applied even now. But when general economic condition of the country improved, birth control through direct medical abortion, came to be limited only to women who were either exhaused by too frequent child-births, or who were physically unfit to produce a healthy child, or contaminated with some kind of contagious disease such as Tuberculosis, which is rather frequent in Russia. Yet, the law directly prohibiting abortion was passed only as late as 1937, when civil life returned to normal prosperity. However simultaneous sanction of generous grants in favour of the mothers of the large family was announced by the Government. These points have been described before and need no repetition.

Thus Soviet Government displayed remarkable elasticity in its policy of hirth control, regulating it according to the needs of the time and with a view to creating a healthy, prosperous, well-educated and well-disciplined nation. The example is open to be followed by the Government of any other country,

facing problems of revitalising the nation and combating poverty, illiteracy and want.

Skilful application and regulation of birth control policy had largely helped Soviet Government to create an exemplary system of child welfare. As perhaps nowhere else in the world, Soviet Government considers the people as the main and most precious asset of the nation. It also considers that the future belongs to the younger generation and as such it must be brought up in the atmosphere of constant and vigilant care and proper direction. According to Stalin: "We (i. e. Government) must see that every youngster of our new generation is brought up with the same attention and care, with which a vigilant gardener grows delicate fruit trees and plants in his orchard."

Consequently, a Soviet child is receiving all facilities of care by the State from the very day of his birth—the event that takes place almost invariably in a Government Maternity Home. He, as well as

Children of the Sun.

his mother, receives free of charge all medical help and supervision; if necessary, he is being placed in a special child hospital or sanatorium, till he is perfectly cured of all his ailments. His mother too, both in pre and post-natal periods, is being constantly watched by the Government doctors,—a luxury within the reach of only a few in other countries of the world, more so in India. She is made to visit frequently mother and child welfare centre long before her delivery

and afterwards, during the whole lactation period. Her diet is properly ascertained and advised, her ailments, if any, are cured or amended, her milk is ascertained to suit the child, otherwise special sterilised milk for the baby with necessary ingredients added to it, is available from Government dairy-kitchens for children.

The child of a working mother, or of an ailing mother, is privileged to be admitted into any of the numerous Government nurseries—each region of the town, each collective or State firm, each Government enterprise—having their own nurseries attached to them and maintained by the State. In this nursery, the child may spend the whole day ; in the period of lactation, his mother visits him several times a day, as she is getting several half-an-hour's offs from the place of her work to feed her baby in the nursery, where it grows and develops under supervision of expert medical and later on educational staff. A network of such nurseries for the child under 3 years of age and kindergartens for 3 to 6 years of age i. e., pre-school period, is spread over the vast territories of the U. S. S. R., and although in remote corners they may not boast of too experienced staff or of all adequate conditions—yet it is a sure and healthy abode for any little Soviet citizen, when his mother is at work or when it is necessitated by the condition of his health or his psychological peculiarities, that are to be watched and corrected. A case requiring better attention may be directed to a larger unit in

he near-by town or larger village. Thus through ;xistence of such nurseries and kindergartens— Soviet mother is largely relieved of her anxieties in 'earing up her child and is in a position to devote lot)f her time and energy to useful services for the general welfare of the nation. She is, in true sense, a responsible, self-sufficient and independent member of the society, taking active part in almost all the sphere of life and progress of her country.

So much for the very infancy of the Soviet child. But as he grows, he requires lot of adequate measures to develop him into a clever, patriotic and dutiful citizen. Thus, a large number of various child's institutions, that may seem to be an undreamed of luxury even for the richer countries of the world, were being created by the Soviet Government.

As early as 1933-37, Soviet Government has built 864 palaces and clubs for children, 170 children's parks and gardens, 774 children theatres and cinemas, as well as 760 centres for technical and art education for children. During the mentioned years more than 1,00,00,000 children attended classes for technical and cultural education, whereas elementary education had been made compulsory and universal. All this shows what great effort is being made by the Government to give Soviet child happiness and a purpose in life.

Thousands of schools have been built, new writers have grown, new teachers have been trained. Scores of national alphabets have been created for the

children of the people, particularly of the people of Asiatic Russia, and Siberia who before Revolution had no written alphabets in the languages of their own. The children of the national minorities were being given right and facilities to study in their own tongue.

With all this, the masses of Soviet populace have been made to realise that care for the children, their correct upbringing, is the primary concern and aim in life of the parents in which every assistance of the state is available.

As soon as a Soviet child grows out of his infancy, as soon as he outgrows both nursery and kindergarten, he enters into a Government school and his life is made colourful and interesting by frequent visits to any of the numerous school-educational clubs,—the institutions, that offer each child and expert guidance for developing his particular talents and originality, thus preparing him for an ultimate ambition and occupation.

Life and School.

There are also frequent excursions to the places of historic interest—among those one of the foremost importance belongs to stern, simple and imposing Monument of Lenin, just at the foot of the Kremlin Wall, on the Red Square of Moscow, where the body of the great leader and reformer of Russia rests in eternal peace in a glass coffin—well preserved for the future generations to cast a reverend glance at this noble and high forehead, at this simple, grave and composed face of one, whom death itself could not

conquer and who lives for eternity. Past few pairs of silent guards of honour, and down to the underground grey marble hall, where is placed the coffin —Soviet children learn the great truth of the self-sacrificing life of their great leader, who fought for the interests of millions not only of Russia but of the world, fought to bring about universal love and freedom to the oppressed.

There are also frequent visits to numerous museums and art galleries, as well as there is prospect of well planned and well spent summer holiday, as at the end of the term majority of the children go off to the countryside for respite and rest. Children's camps are organised by the State, by Trade Union bodies and by Industrial Enterprises, every one of which has resources and facilities to do so. Camps are organised in the vicinity of all healthy cities and are particularly numerous in the places of such health resorts as Crimea and Caucasus. In the summer of 1939, for example, more than one and a half million children in all parts of Russia, both European and Asiatic, were accommodated in such camps, where they availed of all facilities of good rest and physical culture training. Some times these camps are of stationary and some times of travelling type, in which case young tourists cover hundreds and hundreds of miles by rail, water and on foot, pitching their tents as far as they move and leading a kind of nomadic life, which however is subject to a regular programme of observations, study and play.

Thus, during their life in the school, Soviet children are acquiring not only learning, but also are storing their mind with impressions, a knowledge of different peoples of their vast land, the work of these peoples and their psychological make-up—they are entering into the life of adolescence with widely open eyes, adequate knowledge and erudition to choose any path of work or further studies in any of the numerous academical, professional and technical Government institutions.

Almost as a rule the studies are not finished just by passing a final examination and, even while at work in any Government enterprise, one may continue his studies, during his spare time, in any of the numerous Government educational institutions that are attached to Government enterprises, collective and state firms. The short working day of 7 to 8 hours facilitates the possibility of such studies.*

Child and Labour.

There is no unemployment in the U. S. S. R. and every Soviet child is convinced that he grows up and prosecutes his studies with a definite purpose of serving his nation—the fact that exercises sufficient influence to frame one's mind in a right direction.

*In fact even adult Soviet workers—both men and women—are made to replenish their knowledge from time to time by going through a short occassional course of studies, so called "Technical Minimum".

The father of the writer herself, Ivan Alekseevich Sedin, who is working at Moscow and is an educated person, had recently, at his age on the wrong side of 60, completed the last course of his "Technical Minimum" and passed a successful examination.

There is, however, no child labour in the U. S. S. R., whereas very often in the other countries of the world, young workers begin their labour at the age much below 12 and for slaving away same working hours as adults, are getting only half remuneration—in modern Russia the laws have always stipulated that boys and girls from 14-16 years of age are allowed to work only after receiving a permission from Labour Protection Board, and only for 4 hours a day. Young people from 16 to 18 years work only 6 hours a day, with a payment equivalent to that of full working day of an adult (8 hours) ; moreover these youngsters can never be engaged at hazardous occupations, such as mines, shafts etc. From the above, it is clear that in Soviet Union every care is being taken to provide the youngsters with all opportunities to complete their study before they begin to work, as well as to grow them into healthy and well responsible future citizens.

Another striking feature is that no Soviet child knows what is to be dependent on some other person—a master, a proprietor, an employer or a patron. That is why he can study and develop his future career freely and in a healthy atmosphere. Also, Soviet child knows of no bodily punishment or of any sort of coercion. He grows on the example of his parents and his elders, whose heroic labour and self-sacrifice inspires him to be as honest, hardworking and responsible.

Of course what is possible for the State that owes every branch of national economy and is the sole

controller of all available resources, a state that has abolished exploiting classes and on this account is in a position to provide better facilities for the large masses of its populace—may not be fully possible for another country with different form of social structure. Yet the approximate idea and aim may be followed by any other Government that is striving for general uplift of the nation. And just as in Russia the results will speak for themselves.

The other two important and grave questions, well deserving detailed study and survey, are health protection of the child and the aspects of Juvenile Delinquency. Both these problems in the light in which they have been taken by Soviet Government in Russia, are closely inter-related, as one deals with the healthy upbringing of physical body, the other—with healthy upbringing of the mind. The latter, in the Soviet system, is all the more important, in view of the fact that religious influence, with its restraining ethical principles, is practically non-existing in Modern Russia.

The Way to Health.

Let us now study the first question. "Healthy mind dwells in a healthy body" says an excellent English proverb—much the truth as it is, it can be added that healthy mind and a healthy body depends as well upon healthy social structure of the society, i. e., upon more or less equitable distribution of national wealth, so as to ensure healthy growth to every child of the nation in question.

Britons, it seems, lay much stress on sports

as a means of developing a healthy body. Consequently all prominent educational institutions of England patronise their students in forming teams of different sports—a tendency unfortunately lacking in educational institutions in India.

Soviet Government, giving due place to the sport and physical culture in the life of its people, providing as well equal distribution of wealth, went a step further. Soviet medicine, in its very root a preventive working body,—takes care of the national health by preventing disease and safeguarding population from sickness, beginning from the cradle.

Everything connected with public health in the U. S. S. R. is in the hands of the State and is provided by the State budget. This includes children's establishments, such as nurseries, child health centres, children hospitals and sanatoria etc., the entire medical staff of the country is employee of the State, working on the fixed salaries and rendering free medical help to every Soviet citizen, both child and adult. Medical staff, directed to work in remote corners of the countryside, are getting encouragement in the way of higher salaries, yearly commissions to visit the central towns and to replenish their store of knowledge by short 6-week courses in the first class medical centres etc. Also, like every other phase of national economy, public health work proceeds according to a definite plan, which is being created in the beginning of every year by the Commissariat of Health Protection of the U. S. S. R. and similar

Commissariats of the national republics, together with the local boards of health of practically every district and region. By that time it is determined where and how many hospitals, sanatoria, nurseries etc., should be built and how they should be operated. Thus all public health institutions of the U. S. S. R. are directed by central bodies, the fact that makes possible the proper utilisation of all facilities of the country, the wide application of the latest achievements of medical science and researches and unified methods of work. Here, although due attention is paid to the curative method, far greater stress is being laid on preventive medicines. Whether this stress is justified by practical results, can be well illustrated by the statistical data, which shows that compared to pre-revolutionary Russia, child mortality in the Soviet Union had decreased over 50%, while chest expansion of Soviet children shows an average increase of 1 inch and their height 1 to 1¼ inches.

What are then the ways and means of preventive medicines which led to such a startling triumph in combating disease and increasing physical fitness of the nation ? One important answer is provided by the place given to child's welfare.

We already know, and it can be shortly repeated again, that every Soviet child is given medical care from the very day of his birth, when he is being registered in his district child welfare centre. Hence, he is under a constant supervision of the doctor. He is vaccinated and innoculated against contagious

diseases, and in case of illness is provided with medical aid at home or in a child's hospital. Moreover, the child welfare centres do not wait till they are called upon for the assistance. The doctors and nurses of the centre visit the child at home, inspect his living condition and give necessary advice to the parents. Infants, after being one month's old, are accepted into the nurseries where they may stay till their age of 3. Children of such tender age are most susceptible to all sorts of illness and contagious disease, hence the nurseries are under the direct supervision of Commissariat of Health, whereas kindergarten, serving youngsters from 3 to 6 years of age, are in the care of Commissariat of Education, and are only periodically supervised by Sanitary Commission and Medical Units.

The activities of child's polyclinics, dispensaries and hospitals can be well illustrated by the fact that the first children polyclinics of Moscow, established in the first anniversary of Soviet rule, is giving attention to 500-600 child-cases daily. It has its own X-Ray department, arrangements for physio-therapy, its own laboratory and a sanatorium with 70 beds for out-door child-patients, where children receive their treatment in the day, returning back to their homes at night. Practically every part of the Soviet Union has now its own children's hospitals and clinics, the fact which is particularly of striking importance in the republics of national minorities, where before Revolution the ailing people used to be left almost entirely in the

hands of Charlatans and witch-doctors. For example, in Turkmenistan before Rovolution there were merely 200 hospital beds for both adults and children, now there are over 3,000 hospital beds. In Uzbekistan the number of hospital beds had increased from 600 to over 9,000. Simultaneously the qualitative aspects of Soviet hospitals are greatly improved, in national republics too, where hospitals now-a-days are equipped with first class departments in all principal branches of medicine, amongst which prominent place belongs to gynecological, obsterical, tuberculosis, and children's contagious disease departments. These hospitals very often too are being directed by women-doctors of the same national minorities in which they were completely enslaved, veiled under purdah and deprived of all rights in pre-revolutionary Russia.

All children and adolescents of the U. S. S. R. undergo an annual medical examination in the spring. At this time selection is made of the children, who need to be sent to rest homes, sanatoria, hospitals, summer health camps etc. In 1938, for example, over 4,00,000 children took their cures in children's sanatoria.

The per capita expense of the Soviet Government for health to-day is as high as 60 rubles as compared to less than one ruble in pre-revolutionary Russia. The expenditure on kindergartens, nurseries, maternity-homes, dairy-kitchens, sanatoria, summer camps and rest homes for mother and child—is enormous and ever increasing. The results are splendid. Particular attention is being devoted to combat amongst children

the spread of tuberculosis, one of the most raging diseases in Russia. This is done by establishment of special tuberculosis sanatoria and health centres as well as special tuberculosis preventive schools, for the children prone to tuberculosis. Scarcely one institution of this kind existed in Tzarist time even in central Russia, not to speak of Asiatic regions.

Another answer to the ways of preventive medicine is provided by hygiene educational centres—first of its kind, created by the Soviet Government. These centres are meant for training general public as well as special sanitary inspectors in all rules of hygiene at home and at work and especially in Asiatic Russia such centres proved to be of a paramount importance. These centres, through their inspectors, supervise private flats in the houses, working centres, schools, collective firms, nurseries, mother and child welfare centres etc. They are inter-related with the health boards of the district. And it is with their constant vigilant care and recommendation that slums have been wiped out of Soviet cities, particularly in Asiatic parts of Russia and in their stead healthy suburbs with special children parks and play-grounds are developed ; public utilities, such as water-mains, electricity and sewers are largely introduced in the countryside and consequently children are being provided with all healthy conditions for growing up and developing into strong and healthy citizens.

As example of Soviet Russia shows, the stress on

preventive health protection is particularly important for the long-term policy of national health.

What would be the aspects of preventive medicine if applied to in any other country of the world, particularly to India, and specially relating to the mother and child welfare? Undoubtedly the first and the foremost problem would be to study the diseases prevalent in the country, or in particular parts of the country, and to explore and devise the ways and means of combating these diseases by sanitation, disinfection, innoculation, as enormous percentage of mortality, especially child mortality, is caused by unhealthy and infected areas adjacent to the dwellings. Much the same as in Russia, better results can be achieved by work directed from the centre, but in consultation with the local authorities, which must be in themselves responsible bodies. Special attention should be paid to the healthy growth of the child.

Large, as Indian population is, and with complete absence of the birth control—not much importance is being attached to the child mortality. Meanwhile, this kind of attitude is thoroughly unjustified, as such mortality is not a normal regulation of the population "by God's will" but is a sure way towards weakening and degeneration of the nation. The ways to national health dictate that every mother must be preserved healthy by safeguarding her from too frequent births, while every born child must be safeguarded to survive by providing him with adequate

condition for his healthy growth. Here, again, the healthy organism of mother, not exhausted by too frequent births, will be the first contributory factor towards eradication of the traditional ill-nourishment of Indian population ; introduction of well-balanced diet, over and above one that would keep a body and a soul together, a healthy amount of sports, introduced into educational institutions, both for boys and girls, as well as introduction of elementary hygiene, not only of the body but also of the dwellings would complete the miracle of the transformation of the nation.

Juvenile Crime.

What is a crime ? What are its origin, its cause and its proper remedies ? More so, in the case of juvenile crime, when the very roots of the society—its new generation—are affected and when application of the right remedies is of a paramount importance ?

Many of the prominent psychologists of the world, such as A. Quetelet, Ferri, Adolph Prince and others, who engage themselves in solving the problem of crime, agree that the roots of the crime lie in the defects and drawbacks of the society itself, which allows to exist the conditions that are facilitating the development of crime. Scarcely a normally developed individual commits a crime for the sake of a mere sadistic pleasure, whereas even more scarce there can be found evidence of the inherited tendencies that make one a criminal, although the environments

do, inasmuch as economic position of the society at a particular time. Indeed, famine, war, internal strife and the like are inevitably leading to rapid rise of delinquency and even more so of juvenile delinquency.

All this leads to a natural conclusion that a criminal, especially a juvenile criminal, must be treated not as a person who should be humiliated, tortured and punished, in proportion to his crime, but rather as a temporarily insane person, who must be helped to overcome both mental and physical conditions that led him to a crime. Crime is bound to vanish, or at least to recede considerably, if society does not shrink from its duties to apply the right methods for the elimination of crime, as in reality all prisons with their high walls, all concentration camps with their drastic disciplines, all bodily punishments and ways of intimidation so lavishly applied in France and Germany even in cases of juvenile delinquency, failed so far to eliminate the crime.

Any modern nation would be therefore wise to adopt in its criminal code, especially in the case of juveniles, not the dogma of punishment, but the principle of correction through re-education.

Scarcely more brilliant evidence to the triumph of such a policy can be provided, then by rapid receding of crime in Soviet Russia, where along with the radical change of social structure of the society, recourse had also been taken to corrective methods, for nearly all the cases of delinquency, especially juvenile delinquency.

"...Provide everybody with work and with honest means of earning plus proper education and the crime problem will be nearly solved"—said Lenin.

Under Lenin's personal directions, Soviet prisons were re-organised into corrective working centres, where convicts spent their term of corrective labour on a fixed salary, got all facilities to qualify themselves for the skilled jobs and were later accepted to work in Government enterprises, without any reference to their past criminal record, being accorded every opportunity to demonstrate their sincere repentance, by becoming good workers.

The office of the Soviet Procurator was simultaneously transformed into a kind of a registration bureau for all branches of crime, with a view to help criminals to become honest citizens. No question of bodily punishment ever arose, no coercion or intimidation was ever used. Instead, lots of personal care and attention were given to each case and every assistance provided. The results were striking. Criminals, amongst them juvenile criminals, came in or wrote to the Procurator by hundrends, confessing their offence and praying to help them to an honest path of life.

As regards juvenile delinquents, they were and are being placed not in the prisons but in special *communes* and *colonies*—usually healthy spots in the vicinity of towns. The communes—ordinarily large country-houses of former Russian land-lords *pomeschiki*, with beautiful grounds—have in their

present capacity their own schools and training centres, with specially qualified teaching personel. Each youngster, *viz*., a juvenile delinquent, is studied by an expert and the course of his training specially advised and carried out. Nothing reminds the youngster of the fact of his isolation (as of course such children are isolated from the rest of morally healthy youngsters). His movements are free, and although under constant supervision, he has plenty of friends from the same commune. There is nothing to coerce or frighten him, nothing to remind him of his past. The change that occurs in him, is being affected painlessly and gradually, without any bodily punishment—he usually leaves the commune through a door, widely open to an honest labour, wondering himself whether his past criminal life was not merely a bad dream.

Such was the case with the many homeless waifs and young pick pockets in the post-revolution period, children that were left on the hands of Soviet Government in thousands, adrift on the streets of the towns and large country trucks, children that were left parentless, with no fixed abode and without any means of existence, who, as a natural consequence, flocked to the ranks of juvenile delinquents. The problems of combating this child-vagrancy and crime would be insurmountable task, if carried on the old lines. Yet, nearly all of these homeless waifs, in the hands of the new school of crime, grew into honest citizens, respected by all, with whom they work, and working

sometime on the highly responsible posts, such as directors of mills and collective firms, and even finding their way into administrative apparatus as trustworthy representatives of the people. The author herself, when in Russia, came into close contact with more than one of such cases.

With all this, statistical changes in juvenile delinquency in Soviet Russia, since the introduction of the new Criminal Code, deserves special note. If to take as 100 the number of conviction in 1935, of juveniles from 12 to 18 years of age, the following comparison may be arrived at :—

	(first half)	(second half)
1936	102·3	83·5
1937	75·2	...

Thus the drop in juvenile crime is obvious and quite sharp and compares exceedingly favourably with that amongst adults. Of course, when providing criminals with all facilities towards correcting themselves and becoming honourable members of the society, there must be also some restricting influence that will induce convicts to accept the corrective discipline so as not to indulge in criminal life again. In Soviet Union this was ensured by severer treatment of *recedivists*, as well as by the threat of highest social punishment—death for every third or fourth crime, committed after 3 or 4 corrective terms. This point, of course, has great relaxation when dealing with juveniles.

It can be however said, as conclusion, that the new chapter introduced by Soviet Russia into the laws of crime, met with crowning success in the way of solution of crime, and that theory of re-education and social tolerance bore better fruits than any high-walled prisons or social hatred and condemnation. As appplied to juveniles—the solution is unique and the only one that re-vitalises the very core of the mentality of young criminals. Such, or even better, solution of the problems of juvenile crime—is a primary duty of the society, if it strifes to reach the really high standard of civilization.

It may also be added that any other nation, which stands at the gate of a new political era in her life, and may soon find herself involved into revolution and internal strife, may be confronted with the problem of rapidly rising crime, especially juvenile crime. The ways and solutions adopted by Soviet Russia, for this particular aspect, would be then of immense value and assistance.

CHAPTER XII

THE PROBLEM OF NATIONALITIES

(By Mrs. Tatiana Shaha-Sedina)

Planning and National Question.

It is evidently clear that a peaceful, progressive development of a country or a state, which is distinctly multi-national in its character, is inconceivable without presence of national harmony and internal peace.

The structure of most effective, wise and exhaustive planning is doomed to utter failure in absence of these important factors, as without national harmony no peaceful collaboration of people in building the prosperity of their common motherland—is ever conceivable.

Meanwhile, as early as 1924, Comrade Stalin predicted with his usual shrewd political insight :—

"Nowadays India is spoken of as a single whole. Yet there can be hardly any doubt that in the case of a revolutionary upheaval in India, many hitherto unknown nationalities will emerge on the scene."

And to-day, we have already witnessed the manifestation of the sharp contradictions of national question in India—a question that had come to forefront and so far had foiled the efforts of the national leaders to arrive at a real and lasting solution.

But what is a nation? Its origin, its definition and its meaning? The theory of Marx-Lenin-Stalin

maintains that a nation is not something eternal, which had been existing from time immemorial, but is a product of a definite epoch—the epoch of rising capitalism. As applies to Europe—in the West, *i.e.*, in the more developed parts of Europe, the decline of feudalism and the triumphant onset of capitalism created a strong impetus towards the amalgamation of people into nations, with simultaneous formation of these newly born nations into independent and strongly centralised states. The case applies to Great Britain (excepting Ireland), France, Italy and partly Germany. And inasmuch as within these homogenious states there were practically no other national groups of any considerable size and importance—the national oppression as such was yet unknown.

National Question *versus* Capitalism.

Contrary to this, in Eastern Europe, where capitalist development did not yet began, or rather was in its cradle, the formation of the strongly centralised states was fostered not by elimination of feudal disunity and subsequent grouping of people into nations—but rather by the acute necessity of self-preservation in the face of ever existing menace of outside invasions by Turks, Mughals and others. Thus multi-national states were being born in the East, in which people having not yet time to consolidate themselves into economically integral nations, found themselves already wielded together into a single state.

As a general rule such a multi-national state consisted of one more powerful and more developed, dominant nation, and several other weaker, backward and exploited nationalities. This happened in Austria, Hungary and Tzarist Russia. And inasmuch as the states of that particular period were the creation of bourgeoisie—it was a bourgeois policy that led further to the "national movements" and to the complicated question of nationalities.

Indeed, as soon as capitalism began to develop within the multi-national states of the East, the organised trade, the modernised means of communications and the springing up of the large towns and settlements fostered the consolidation of politically subject nationalities into economically integral units and led to the awakening of their national consciousness. This is illustrated by consolidation of Poles and Czechs in Austria, Lithuanians, Ukrainians, Armenians etc. in Russia and so on. And although such awakening could no longer help the people to form themselves into independent national states, as these tendencies encountered strong opposition of the ruling *bourgeois strata* of the dominant nation—it nevertheless led to national unrest and "national movements", in which the leading role was invariably played by the bourgeoisie.

Yet, within the frame of capitalism all these national movements occurred essentially not as a struggle between entire nation and a nation, but as a struggle between ruling classes of the dominant and

subject nations, say between petty bourgeoisie of the subject nation and the bourgeoisie of the dominant nation, or the bourgeoisie of the subject nation and the rich landlords and aristocrats of the dominant natior, and so on. And at the first instant, these clashes occurred on purely economic ground. The market being one of the most vital problems of the young bourgeoisie, the desire of acquiring control over such market "at home" have thrown national bourgeoisie into the struggle with the bourgeoisie of the dominant nation.

The second stage follows—the stage when the bourgeoisie of the dominant nation, being the more powerful opponent, retaliates by introduction of series of oppressions and repressions in respect to the whole subject nation or nations, by restricting national freedom and national movements, restricting the use of national tongues, abolishing national schools, applying disfranchisement and so on. Hence, the national struggle assumes not only economic but also political aspect, to which skilfully stirred and mobilised by bourgeoisie national sentiment of the lay folk furnishes formidable background. The slogan of the "fatherland in danger" comes into circulation, bourgeoisie skilfully identifying itself with the cause of the people.

Of course bourgeoisie tries to rally as larger groups of the people as possible under simingly common banners. The strength of the national movement at this stage

depends upon the extent of participation of the national proletariat and the peasantry.

The Dangers of the Leadership of the Bourgeoisie.

The peasantry, usually unorganised and illiterate in its mass, responds to the call of its national bourgeoisie with as greater readiness, as deeper is the repression adopted by the dominant nation in respect to the land. Whereas the response of proletariat, mainly urban workers, depends upon the organisation of this proletariat and the degree of its class consciousness. A proletariat, under a correct leadership, awakened to class consciousness, need never rally under the banners of bourgeoisie, as the general policy of the "national movements" in capitalist states constitutes a direct danger to the interests of proletariat and peasantry. Indeed, the factor of national movements serves to retard the growth of intellectual consciousness of national proletariat and diverts its attention from the main cause—the cause of economic and political emancipation from the exploitation by the bourgeoisie, both their national bourgeoisie and that of the dominant nation. Then again, it is only on the rare occasion that such national movements (and in that case predominantly agrarian in their kind, as in the case of Ireland) assume a mass character and steadily grow around a basic principle and a solid demand. Whereas on the other hand, many of national movements are diverted to nothing better than a series of petty collisions, a fight over sign-board written in that or this tongue, as in Bohemia, Rumania or Tzarist Russia.

At last, the conclusive and poignant stage of national question is reached when policy of repressions, however atrocious in its kind, passes into policy of inciting nations against each other, policy of massacres and pogroms, when the horrors of the situation is nearly altogether over-shadowing the real and common cause of proletariat and thus yields a victorious field to "divide and rule" policy of capitalist bourgeoisie.

National Questión *versus* Imperialism.

Curiously enough, the picture of horrifying national disharmony that developed in the backward multi-national states of Eastern Europe, repeated itself, in the advanced homogeneous national states of the West, even in intensified proportions, when some time later the rapidly growing capitalism had reached the stage of imperialism. The need for more markets, more raw materials and fuels, the search for cheap labour and eventual seizure of new colonial territories, the formation of powerful imperialistic armies, to protect the colonies, as well as the land and sea routes—have transformed the hitherto homogeneous states, or the states of so-called "great powers" of the West, into practically multi-national or colonial states, with all the features of national oppression and national conflicts and disharmony. Only by now the question far outgrows home issue and assumes the proportion of bitter international conflict. The imperialist wars

and the misery of the average masses throughout the world follow. But even the wars fail to solve the irreconcilable national contradictions, while the post-war period presents a still gloomier picture of national enmity, inequality, oppression and intensified conflicts, whereas *the toiling masses gain nothing and pay with their blood these armed conflicts of the imperialists.*

As to the colonies, what had been perpetrated on the "home soil" in the multi-national states of Eastern Europe against the oppressed national minorities, is being carried out even with more ruthless terror on the soil of a colony, in order to strangulate every vestige of political movement or the opposition, to wipe out every trace of statehood in the colonial people, and further to retard as far as possible the intellectual, cultural and industrial development of a colonial nation, through the means of "divide and rule" policy and in order to maintain this policy.

The system of arousing national animosity amongst the colonial people, who are essentially the sons and the daughters of one and the same soil,—the animosity of not only nation *versus* nation but even province *versus* province—the system of pogroms and massacres—is at times nothing less but being encouraged and as weaker grows the grasp of ruling power over a colony, as more internal disorders and strifes are being fostered within this colony. The issue is singularly aggravated by the fact that in the case of a colony, it is an outsider, an entirely alien nation, which has not a single national feature in common with the colonial

people,—that tries from far away "home" to assume the pretended role of the wielder of the nations within the colony. When the great Russians or Magyars of Hungary assumed similar role within their respective states—they could at least put forth the claim of a common territory, to great deal of a common economic interest with their national minorities, and so on.

The one conclusion is clear that in the framework of both capitalism and imperialism the national question is being always exploited to serve the purposes of ruling strata of the dominant bourgeoisie and aristocracy, whereas in reality the national question is essentially a peasant question—a question of the balk of the people, as soon as there is awakening of this people to their national and anti-imperialist consciousness. The solution of this question cannot come therefore before the very basis of exploitation of one nation by another, of one man by another—is smashed by the truly democratic laws, not merely drawn on the chart, but put into practice. At this juncture it would be the duty of the democratic national Government, especially in respect to a multi-national state or a federation, to assist the formation of minor nationalities into integral units, according to the peculiarities of the true national features, that may be led into the definition of a nation.

What is a Nation.

But what is to be taken as a correct definition of a nation ?

The tendency of the bourgeois political philosophers

favours the inclusion of Religion into the main factors determining the national unity. Thus the Jews are held to constitute one nation, no matter how much disunited they are in reality, no matter that often they do speak different languages, inhabit different territories etc. In our opinion, it appears ridiculous that the fading religious rights should be emphasised to exercise more powerful influence upon the people, in uniting them into nation, than the living social, economic and cultural environments. Indeed, it would be difficult to imagine a people, speaking a common language, inhabiting one territory, tied by the common economic interests, but professing different faith, as the people belonging to different nations. The Catholics and the Protestants of France nevertheless constitute one French nation. On the other hand, it would be inconceivable altogether to suppose a people divided by all other features save the community of faith—to be one and the same nation. The religious fanaticism, fostered by the bourgeoisie, may unite such people at times for different sorts of strifes—yet essentially they remain to be different nations. The Egyptians and the Arabs of Palestine, united in their common Musalman faith, are now fighting hand in hand against the menace of the Israil—yet the Egyptians and the Arabs cannot be said to be one nation. Thus, apart from minimising or overlooking altogether, the real and true features of national unity, apart from holding too much of misticism, the bourgeois theories only contribute to cultivate the

religious difference in the life of the nations—the difference that often proves to be so powerful weapon in the internal strifes and in sharpening national animosity. Whereas the modern tendency is to minimise, not to foster this kind of difference, as well as to divorce the matters of religion from the matters of state. In the life of India, quite of recent, the gallant Prime Minister of the Indian Union, Pandit Jawaharlal Nehru, had clarified in one of his speaches that in his programme of development for India he would like and endeavour to see his country being a secular state.

But even the progressive theoreticians on national question, amongst them the authorities like R. Springer, and O. Bauer, the well-known social-democrats of Austria, furnish an explanation that is short of its realistic conviction :—

"A nation is a relative community of character··· The character of people is determined by nothing so much as by their fate···A nation is nothing but a community of fate (which in its term is determined) by the conditions under which people produce their means of subsistance and distribute the products of their labour.

A nation is the aggregate of people bound into a community of character by a community of fate."

—*O. Bauer.*

This kind of definition singularly overlooks the importance of such predominant features of national unity as commonness of the territory, language, economic

interests etc. Identifying nation with its "national character", it divorces nation from its soil, as well as other important influencing features, so that nothing but a "paper nation" remains, as it is essentially the "conditions of life" that are moulding people into nation.

English and Americans are two separate nations, though it is not their national character that divides them so. For Americans have originated from England and have brought with them to the new world the typical English national character, in addition to English language. Yet in the course of but a short time the influence of different conditions of life moulded them into separate nations. So much for the bankruptcy of "national theory", as maintained by Bauer.

R. Springer offers even much funnier definition :—

"A nation is a union of similarly thinking and similarly speaking persons. It is a cultural community of modern people, no longer tied to the soil."

—*R. Springer.*

Here not only the importance of territory is overlooked all together, but the peasantry—the backbone of almost every nation—the bulk of the population, that in view of its very occupation is tied to the soil —is excluded from the ranks of the nation. There is no internationalism, which Springer apparently tries to put into foundation of his theory, but there is a great deal of quite idealistic nonsense, that has no connection at all with the living society.

Meanwhile, in the solution of the problem of

nationalities, which is usually so acute in every multi-national state—more so after the length of colonial exploitation—the correct definition of a nation, the selection of real distinguishing national features—plays a paramount role.

In this light, it would be difficult to find a more exhaustive, more modern and more realistic explanation than one furnished in the subtle analysis of the question, in its various aspects, by J. Stalin, who speaks on no lesser authority than a national question solved, and the essence of which is hereby offered to the reader.

A nation is a definite, historically constituted community of people. But this community is not racial, neither it is tribal, as nearly all modern nations, including Germans and Britons, commonly so very proud of their blue blood, were being formed out of the people belonging to different tribes and races. Yet, only in the case when these tribes and races came to form a stable community of people, and not merely a loose and chanced conglameration, as in the case of ancient Greek, Roman or Persian empires—one can speak of a nation.

However, even a stable community of people may not necessarily be a national community, inspite of it being a political community. The latter may be sub-divided into so many different national groups of the people. Russia is definitely a stable political community, but nobody can call Russia one and a single nation. One of the main features of a nation is a *common language*, versus a political community or a

state or a federation, which may not necessarily have only one language.

But a common language does not necessarily bind the people into a single nation, in absence of the second paramount feature of the national unity—*the commonness of territory.* The example is furnished by Americans and Britons, who inspite of their common language, do not constitute a single nation.

And yet, even the commonness of territory and language are not in themselves sufficient for the creation of a Nation, as the people having the affinity of the above-mentioned two features may be split into a number of feudal units under different princelings or principalities, so that they would be unable to share a common economic life. The example is furnished by Northern Caucasus in pre-revolution period. Whereas in India such cases are rather too numerous. Yet a nation as such is inconceivable in absence of this important and the third national feature—the community of economic life—*economic cohesion.*

The fourth and subtlest of all features that binds the community of people into a nation—is the national character, or more definitely, a common *psychological make-up.*

Thus the conclusive definition of a nation is that:— "A nation is a historically evolved, stable community of language, territory, economic life and psychological make-up, manifested in a community of culture."

—*J. Stalin.*

Taken separately, none of the above-mentioned factors is sufficient by itself to define a nation, but in absence of even a single one out of these factors—a nation as such is non-existent. Of course, like every historic phenomenon, a nation is subject to various changes, according to different influencing circumstances of different times. A nation has also its beginning and its end.

Thus a realistic definition of a nation by J. Stalin bears a strong and scarcely disputable evidence to the fact that inspite of so many controversies carried out quite of recent, India is definitely a multi-national political unit or a state. Hence, the solution of her grievous national question is predominated by this essential factor.

India off Bondage.

The summarised conclusion of readings of Marx-Lenin-Stalin on National Question, as represented on the previous pages of this chapter, unfolds with a penetrating insight a real picture of India to-day, as it has been left into inheritance to its National Government by the foreign Colonial Power, after years of severe imperialistic exploitation with all its grievous consequences and in the midst of bitter internal genocidal national conflicts that are rocking the very foundation of her newly born freedom.

The complicated pattern of India's past history adds further dramatic touch to her present national strifes. India—the gem of the world, one of the richest

countries—had naturally, in the course of the long centuries of her existence attracted the eyes of so many foreign invaders. The turbulent checkered history followed, where the invasion piled upon invasion, bringing in its stride some time an age of gloom and tears, some time an age of bounteous prosperity.

But there is something more, something peculiar to India alone, something revealed so powerfully by Pandit Jawaharlal Nehru in his beautiful "Discovery of India"—the amazing capacity of India towards assimilation. The soul of India resisted, in its own subtle way, the influence of every foreign psychological make-up, brought to her by her various invaders, whereas in turn each one of these invaders invariably submitted to magnetic influence of India, had lost his own identifying features and had unconsciously merged into India, her peculiar philosophy and her soul.

Thus India represents not only a multi-national political unit (state), but a Unit of singularly complicated psychological make-up. Britons alone evaded this peculiar influence of India—India could not Indianise them—but neither could they, with all regimentations, crush the soul of India, that is now rising in Independence invested with a culture and spirit quite of her own.

One thing, however, one deep wound, both moral and physical, had been inflicted on India—her partition into two. The Colonial Administration had created so far on a vast portion of Indian territory a centralis-

ed state, and had bound the people into a large community, which although multi-national in its character, had been wielded into the frame of common economic life. Of course the multi-nation factor, combined with religious fanaticism was ever there, so as to afford Colonial Government an ample chance to sow the seeds of discord, whenever thought advisable, for the maintenance of "divide-and-rule" policy. Yet the fact of economic coercion was also there. Evidently it served the conveniences of Colonial exploitation, although in the long run it had turned to be something more. When with declaration of independence Britons have lent a "helpful hand" in the matter of partition—they accomplished a singular diplomatic fit—India which had been hitherto moulded by their own efforts into a single economic unit now stood vivisected and helplessly bleeding. Chaos and disastrous disorganisation followed. This was a parting kick of the imperial power.

Let it be added that the development of India, under influence of peculiar circumstances of the last say 200 years, had taken place in a very uneven manner, and when some communities of the people went through advanced stages of capitalism (West Bengal, Madras and Bombay Province, etc.), feudalism flourished side by side (Hyderabad, Nepal), while in the so called "tribal area" (Naga Hills, portions of Beluchistan) people were left almost in a primitive stage. Such is the position at a glance.

No doubt, in regard to national question, the

situation in India to-day bears a strong resemblance to one that had arisen in Russia, just after the Soviet Government came into existence. Here we of course, do not emphasise that Soviet form of government is the one and the only solution towards national problem and Comrade Stalin himself in his "Collection of Articles on National Question", 1920, had pointed out that :—"even within the framework of capitalism it is possible to reduce the national struggle to a minimum, to sever its roots, to render it as innocuous as possible for the proletariat. This is borne out by example of Switzerland and America.* It requires that the country should be democratised and the nations allowed opportunity for free and equal development."

India and Tzarist Russia.

With all this, the Soviet system had exhibited such singular national harmony, that a short insight into this harmony may evoke interest of every average reader.

What it was that the newly born Soviet Government received into inheritance from defeated Russian Monarchy ?

By that time the general population of Russia totalled approximately 14,00,00,000 heads. Out of this the non-Russian nationalities amounted to about 6,50,00,000 people. They comprised Ukrainians, Byeloriussians, Kasakhs, Kirghiz, Uzbeks, Taziks, Azerbaijanians, Armenians, Chechens, Kabardins, Volga and Crimean Tatars, Volga Germans, Jews,

*The Negro problem of America however offers a note of discord.

Maris, Chuvashes, Buryat, Yakuts, Samoyeds, Aleuts and many others. Some of them were so primitive that they had no written language of their own.

Taken in *conspect*, the efforts of the dominant Great-Russian bourgeoisie were concentrated on uprooting every sense of statehood and national dignity in these people, in suppressing their national culture, restricting the use of their national tongue, keeping them ignorant, suppressed and backward into primitivism as compared to the Great-Russians themselves, who developed according to the march of the time.

Thus no wonder, that on the vast spaces of Russian territory Soviet Government was faced with national groups of the people, from advanced stages of capitalism (Great-Russians, Ukrainians), to the medieval semi-patriarchal, semi-feudal form (Caucasus, Crimea) and even to the primitive pastoral, tribal relics (Khirghisia, Bashkiria). Such amazing inequality, carefully maintained by the Monarchy served as an indispensable factor in the semi-colonial exploitation of nationalities. The expression of dissatisfaction, if any, could rise only from the major groups (Ukraine, Byelorussia), the rest too weak for any kind of retaliation, were being gradually sunk into the lull of complete intellectual dullness. Hence the major groups commanded more considerate treatment and often gained an open favouritism. All such factors play a main role as well in the scheme of imperialistic colonial exploitation, to which India had been a prey for such a long time, and the results of

which are so painfully reflected in her national problems to-day.

The Severed Roots of Animosity

The attitude of Soviet Government after it assumed the power had been strikingly remarkable, as it strongly emphasised that :—

1. All the nationalities comprising Soviet Russia must be given an opportunity to a free national development and must be organised into separate integral political units—or republics, of their own. (Here we mean the people, possessing definite class-structure and occupying definite territory.)

2. That every notion of the ruling and subject nations, mother countries and colonies, imperialism and national oppression must be totally abolished from the structure of Soviet society, and mutual trust combined with feelings of fraternity must be cultivated in its stead, on the basis of new democratic laws with complete abolishment of all sorts of national and national-religious privileges.

3. That further on, the organisation of National Republics must proceed in conformity with the right of nationalities to self-determination, *i.e.*, in arranging their life according to their own free choice, their national character and their customs. Of course, it does not presuppose that the government is to help the nationalities, while arranging their life, to retain all the obnoxious and out-of-date customs, that prevailed in some people, *viz.*, ridiculous religious fanaticism,

enslavement of women, forced marriages, "ransom" system and abduction—as per example in some part of Caucasus the abduction of bride formed a part of marriage rituals, etc. On the contrary, government is to help these people to overcome and to eliminate these customs—not on the strength of force but on the strength of re-education and wisely-carried propaganda, and to cultivate instead other vital national features, *viz.*, national art, literature, national sport etc.

4. That furthermore, inasmuch as private property and capital disunite the people, create national enmity and intensify national oppression—a common property, or at least more or less *equitable distribution of wealth*, combined with collective labour, contribute towards unity of the people, eradication of national oppression and mutual distrust. The Soviet Government thus feels it its duty to abolish immediately large private properties, both in the Great-Russian territory and in that of the oppressed Minorities, as well as to help the toiling masses of hitherto suppressed nationalities to consolidate themselves into the strong collective bodies and to fight hand in hand with their Great-Russian comrades against bourgeoisie, both Great-Russian and national bourgeoisie.

That in consequence of all these adopted policies—

I. All the nationalities within the territory of Soviet Russia irrespective of the stage of their development, are to be drawn into the current of common Soviet development and common building up of the Soviet economic system.

II. That government's duty was to assist the backward nationalities to emerge out of patriarchal-feudal relations and to catch up with the more advanced central Russia, thus sinking into oblivion the panacea of the dominant nation the imperative programme through which this aim could be achieved being to help these people :—

(*a*) To develop and consolidate their own Soviet State system in consistence with their national peculiarities, *i. e.*, those of class-structure, culture, social life, as well as historical past.

(*b*) To organise their own courts, administrative bodies, economic organs and government organs, functioning in the native language and recruited from amongst the local people, well acquainted with customs and psychology of the local population.

(*c*) To develop a press, (with creation of the new alphabets in the case of extra-backward people), schools, theatres, clubs and cultural and educational institutions functioning in the native language.

All these measures of course must not deviate into narrow nationalism and organisational demarcation and the stress must be emphasised rather on what is *common* than on what is *disuniting*. In Soviet conditions this aim is achieved by uniting the toiling masses of the nationalities into integral collective bodies and uniting these bodies into a *single party*.

Further important factor is that the formation of Soviet Republics came along the lines of not *national*, but *regional* autonomy, with the various casual national

groups failing within such regional autonomy being secured by general democratic law to use their fullest possible right to a free development of their own, *i.e.*, having their own school, theatre, press, representation in administrative and government bodies etc. In Soviet constitution, article 123, this right is emphasised in the following unequivocal terms :—

"Equality of rights of citizens of the U. S. S. R. irrespective of their nationality or race, in all spheres of economic, state, cultural, social and political life is an indefeasible law.

"Any direct or indirect restriction of the rights of or, conversely, any establishment of direct or indirect privileges for, citizens on account of their race or nationality, as well as any advocacy of racial or national exclusiveness or hatred and contempt, is punishable by law."

Thus out of ruins of Monarchy were being created new Soviet Socialist Republic. But, within a carefully worked out scheme of administration—scheme that must be ascribed to singular political foresight of Vladimir Ilich Lenin—no vivisection of the country, no economic or political disorder followed the birth of these national republic. Things went on, their smooth way.

After introducing the rudiments of Soviet principles within these Republics, after re-educating the national minorities, removing their deep-rooted distrust and dragging them out of their ignorance to the surface of progressive path of development and modernisation—

the final aim of Soviet government—aim hitherto long ago fulfilled—was to unite these republics into a federation or rather into a single confederate state.

Federation as a Basis of National Harmony.

The kind of federation that would promote the best conditions of national harmony, combined with external security and guaranteed internal economic progress, with unhampered national development of people, is a federation based on commonness of military and economic affairs as well as common principal civic law. Such federation as a mighty unit, secures the integrity and progress both of the individual republic and the federation as a whole. The common economic interests dictate the joint participation of all composite Republics in creation of powerful productive forces of the federation, whereas in time of emergency it is an honour and a privileged duty of the Republics to extend to each other correlated help. Thus the Republics richer in food must come to the aid of their sister-republics poorer in food, the advanced industrial republics must supply with their products the lagging behind regions and so on.

For the multi-national country, especially in the period of economic disruption, as affected Russia so badly towards 1917, after the disastrous World War No. I, following Revolution and civil strife, the federation of this kind, as conceived by Vladimir Ilich Lenin—is a unique means of speedy recovery, for building up of the

mighty productive forces of the country or rather re-building her undermined and inadequate productive forces, as is the need of India to-day.

On the other hand, the federation of this kind holds a great rigidity of administrative structure. It embraces various social, cultural and economic conditions of different nationalities at different level of development so that one form of federation or the other may be applied to such different nationalities, in order to assure them the best assistance for a smooth and even march on the way of common development. In Soviet Russia the varieties of federal forms went from independent Contractual Republics to the Autonomous Republics and Autonomous and National Regions. Yet, the subsequent paragraph will show that such varieties of Federal forms far from inflicting any kind of political or social inequality, did not estrange or disunite the people, as commonness of economic and military interests, have knitted them into a solid and harmonious whole. The exhaustive and wise Plan of General Development, combined with cleverly carried educational and political propaganda, encouraged development of purely National cultures in the National Republics and Regions in such a manner that these varieties of culture, although essentially National in their character, were invariably marked by the commonness of their principles and outlook, on the background of common Civic Law, common labour, common patriotism for common motherland, coming out of the firm conviction that it is this common motherland (administered by the

people's Government) that possesses the will and the power to protect and to take care of peace and progress of each separate National Republic, within its powerful fold.

We repeat that the whole success of the introduction of Federal form of Government in the multi-national State depends on the capacity of leaders to base this scheme essentially on the commonness and not on the difference of the national groups, comprising the federation. A deep understanding of national peculiarities, reckoning with specific conditions of various national regions, a correlated help and not bureaucracy and aloofness—are those essential features which are making Federation a lasting effective "life" and not "paper" union. It must be a willing union of the people, based on mutual trust and co-operation not on provincialism, benevolence or condescension, all people are equal and every Nation is sovereign, but not sovereign with the rights of goondaism and destructive activities. It must also be carefully acertained as to whether this or that people are constituting a really separate Nation, or merely forming a national minority in a particular Region. People disunited by language and territory can never constitute one Nation.

There is no place for sentimental dealing with such important question as that of Nationalities. A bureaucratic stand that all the people, inhabiting one State, or one political unit, are to be considered as one nation, however different are their national features—is unjustified, oppressive and harmful to the extreme, both

to the interest of the country and that of the separate people, for obvious reasons. On the other hand, there is no greater blunder, no greater harm to be done to the people of hitherto a common country as to let them to be drifted apart into separate camps of animosity, before offering them any better solution.

Conclusively, in international relations, a federation based on democratic law, on the background of equitable distribution of wealth and complete elimination of exploitation and of a large private property—presents a significant historical phenomenon, as it marks the third stage in the development of national problem, *viz.*, the disappearance of national oppression and national contradictions. The first two stages being: the birth of the nations at the dawn of capitalism and subsequent imperialism and colonial oppression. Here the example of Soviet Russia indeed speaks for itself.

Soviet Democracy in Operation.

There are 11 constituent national republics besides various national and autonomous regions comprising Soviet Russia. They enjoy equal right in all aspects of political, social and cultural life. Each Constituent Republic has a constitution of her own, which, although following the main lines of the Constitution of the U. S. S. R. is yet drawn in conformity with the specific national features of the republic. The territories of constituent republics cannot be altered without the consent of their people. The republics have right of free cessation from Soviet Union subject only to one

clause, that such a cessation is doing no harm to the interests of the whole Union—to be decided by the votes of representatives of all the 11 Republics.

The Constituent Republics are on contractual relations with Soviet Union. At Moscow and the capitals of other Republics they are represented by their own diplomatic missions.

The uppermost Administrative Body of the U. S. S. R.—the Supreme Soviet consists of two Chambers :—the Soviet of the Union and the Soviet of Nationalities—both possessing equal rights.

The singular equality of rights of all National Constituent Republics is manifested by the fact that each of these Republics, irrespective of the size of territory or population, is privileged to elect 25 people's delegates into the Soviet of Nationalities. Thus the Republic of Azerbaijan, with its population of merely 3½ millions is represented in the Soviet of Nationalities by the same number of 25 delegates as Ukraine, more than 4 times larger in her territory and with the population exceeding 3,00,00,000 heads. In the administrative apparatus of a federal state, where all matters pertaining to social, administrative or political values are decided on the strength of the delegate's vote, such equality in representation means equality in all-round aspects.

Each Autonomous Republic of the U. S. S. R. elects 10 Deputies to the Soviet of Nationalities, each Autonomous Region—5 Deputies and each National Area—1 Deputy. But much the same, as social life of the

Republics is guided by the similar social laws, the industrial and cultural development of the Republics proceeds within the frame of general dominating Plan, applied to each Republic in confirmity with its specific national, as well as natural, peculiarities.

Such are the brief features of Soviet federal structure, in the following words emphasised by J. Stalin, the author of the Constitution of the U. S. S. R. :—

"...The absence of exploiting classes, which are the principal organisers of strife between nations; the absence of exploitation, which cultivates mutual distrust the fact that the power is in the hands of the working class; the actual practice of mutual help among the people in all spheres of life; and finally the flourishing national culture of Soviet people. Culture which is national in form and socialistic in content—all these have brought about a radical change in the aspect of the peoples of the U. S. S. R.; their feeling of mutual distrust has disappeared, a feeling of mutual friendship has developed among them, and thus real fraternal co-operation between the peoples has been established within the system of a single federated state."

—*J. V. Stalin.*

The amalgamation of Soviet Republics into a single Confederate State—commonly known as the U. S. S. R.—took place as early as December, 1922, and although since then they have grown side by side in mutual harmony and co-operation, the World War No. II proved of a bitterest test to their singular unity. For the leaders of Germany, and in fact the whole capitalist world behind the screen, watched with alien eyes the supposed disruption of Soviet

Republics—a disruption on which were based the main plans of German invasion.

Yet nothing of the kind happened in reality. It were Kazakhs and Khirghiz troops that abreast with their Great-Russian comrades met the terrific onslaught of the first invading forces of Germany, somewhere on the planes of White Russia (Bylorussia) and found their common grave in the battle for their common motherland. It were Siberian regiments that fought the battle of the besieged Stalingrad and have died in its smouldering, blood-drenched ruins, almost to the last man. For they were all Russians first, and Khirghiz, Kazakhs, Siberians afterwards.

Hand in hand went they in a bloody campaign to the remotest corners of distant lands, and when in 1944, I met them in Iran, wielded into a single army—they had lost even their national features—they were one body, one soul. Only one bitter-sweet desire kindled in their tortured mind—the liberation of their country. For them there was no greater love.

The beauteous Persian maidens, with their hazel languishing eyes, who inspired such ardent gallantry to the British and American soldiers—typical representatives of capitalist army, for whom the war was business and adventure combined—failed to produce any effect on the sober fighter of Soviet regiments, who went through the streets of Iranian town—stern, unsmiling, aloof, with expression of a poignant sorrow, engraved on every feature of his face, who flinched not a step aside of his iron discipline—

so important for victory. And if you could see somewhere in Meshed or Teheran a Russian commander, be he an Armenian, Russian or a Jew—strolling with two bottles of *vodka* in his breeches pockets—you could never see him drink.

Thus the common efforts, suffering and sacrifice brought about a victory unparalleled in modern history of the world.

It has already been stressed that under peculiar conditions of Soviet protective laws, and in the atmosphere of prevailing cordiality and commonness of the interests, the development of different national cultures within the territories of Soviet Sovereign Republics and Autonomous Regions of the U. S. S. R. did not in any way hinder the general progress of the Union. Contrary, it has contributed a rich and colourful note to the general pattern.

The Power of Art.

Russians are great lovers of Art. So are people of many National Republics. Art is the powerful medium through which the soul of the people expresses itself. Now that a free use of national languages had opened the advent towards development of national literature even to the people who after revolution had begun their cultural development from A-B-C, on the basis of the newly created alphabets, as per example Chuvachis, Loparis, Samoyed—of Siberia, Ingushis, Mingreals—of Caucasia etc.—the literature of this people had been now created bit by bit out of the colourful folklore,

The Soul of Russial Art, Grand Opera, Moscow.

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cultivated by generations of unknown artists and carried out from lips to lips from generation to generation, with unconscious love and pride and inspite of the iron curtain of oppression. This literature is now being translated into the various national languages of other Republics as well as into Great-Russian language itself so that contact between people, their knowledge of each other becomes closer, more real and effective, promotes better feelings of national harmony. For if art is a medium through which the soul of the people expresses itself, it is a powerful medium through which the mind of the people may be awaken to the new social consciousness—social unity. Art is indeed that great medium which helped Soviet Government to build within its National Republics the sort of a peculiar culture, which although *national* in form, is *socialistic* in contents, and not only disunites but knits the peoples into a closer friendly collaboration.

Before Revolution, the oppressive national policy of the Government endeavoured to "Russianise" the minor nationalities, to suppress the development of national art and literature. And while at present special investigating parties in various National Republics, call from *Aul* to *Aul**, from *Kishlak* to *Kishlak*†, in search of golden strands of national genius; gather songs, proverbs and tales from the lips of the old and often illiterate narrators and

* Aul—a village, in the language of Caucasia.

† Kishlak—a village, as called in Central Asian Republics.

singers of half-forgotten folksongs in order to facilitate the birth of national literature—the Tzarist Government neglected to preserve in writing even such fine specimens of oral epic, as that of *Manus** of Khirghizia—a work now running into 3,00,000 lines and ranking in value with such fine classical epic as *Shah-Nama* of Ferdowssy.

No better fate overtook the fine written pieces of national genius belonging to advanced nationalities. And it is only quite recently that the melodious lyric of Taras Shevchenko—a great poet and patriot of Ukraine (1814-61), or the exquisite poem "Knight in the Tiger Skin", belonging to Georgian bard of 12th century—Shotha Rustavelli—have come to be known, loved and appreciated not only by people of the U. S. S. R. but by many readers abroad.

But while endeavouring to re-discover, to gather and to preserve the relics of the old national culture—it was an essential aim of the Soviet Government—aim long ago realised—to create the ranks of the new Soviet national writers, poets, songsters, artists,—whose work is inspired with the new bouyant life, the energy of the young enthusiasm surging throughout the country. So much so that the very tone of national songs and poems switched from monotonous sobbing tunes into the tunes of jubilating, rising spirit of the people, whose chains of slavery bind them no longer. The ardent appreciation of people in respect of these new propagators of art,—national songsters, artists,

* Manus—the name of an ancient hero of Khirghizia.

writers, poets—had risen to such a level that it is not unfrequent occasion when such individual genius are being choosen as the people's representatives to Supreme Soviet of the U. S. S. R., as per example Suleiman Stalsky, the poet of Daghestan (Caucasus), Chiaureli, cinema-producer of Georgia, or Abdymas Maldybayev, a young composer and author of national songs of Khirghizia.

New national theatres had risen in hitherto primitive regions. The cinema—the powerful weapon of propaganda and education—went to the furtherest corners of the Union, with faithful camera-man not shrinking from the long journeys on dog's team in desolate, snow-swept regions of Siberia. Whereas National Republics like Ukraine, Geogia or Armenia have created their own cinema industries, with the studios in Kiev, Tbilissi and Erivan, the respective capitals of these Republics.

The artists of national republics and their theatrical troops are visiting the art competition at Moscow, held regularly each year in Moscow, Grand Opera, where they exhibit and interpret the essence of their art to the large audiences of people, belonging to other nationalities, securing warm appreciation and often a sincere admiration of such audiences; thus art becomes correlated to life, serving as a powerful weapon in the matter of maintaining national harmony and promoting the feeling of solidarity, when national aloofness disappears and mutual appreciation is developed to a very high

level. Of course, such powerful vehicles of art must be essentially filled with jubilant life and energy, not with the tones of *plantiff complaint* and helpless mourning, so that it can touch the strings of hitherto dormant spirit of the people, stir it to action, inflame it with the burning desire of progress and march forward, arouse it from sleep to bouyant activity. Art of slavery must change its tones into the Art of Freedom. Art is a string that is binding the people into solidarity and harmony. Art is the mirror of the people's soul. Art moulds this people's soul into the frame of its own aspect—be it *plantive mourning* or jubilation, depression or glorious rising of spirit.

And what more glory, more national harmony and mutual appreciation can be expressed in a single song, as in that composed by poet-laureate of Byelorussia—Yanka Kupala—and warmly accepted by people of the whole U. S. S. R. on the rank of national anthem :—

> "From great Moscow to the farthest border
> From Arctic Seas to Samarkand,
> Everywhere man proudly walks as master
> Of his own immeasurable fatherland."

From Destitution to Prosperity.

Tzarist Russia with its Imperialistic form of Government used to be the "prison of the Nations". Want and destitution was the lot of National people. Sons and daughters of the lands with immesurable mineral and agrarian

wealth—they used to be starvingly poor. Not unlike runs the remark of Mr. M. L. Darling :—

"The curious thing about India is that her soil is rich and her people are poor."

To-day in the framework of the gigantic Gosplan (Government Planning of the U. S. S. R.)—the Industrial and Agricultural development of National Republics took place on an unprecedented scale. The system of mutual correlated economic help, practised by National Republic—is one of the main contributory factors towards the success of this Plan.

Take for example such remote National Republic as Kazakhstan. It occupies a large territory of 10,60,000 sq. miles and is exceedingly rich in valuable minerals. In fact 60% of copper and 50% of nickel deposit of the whole U. S. S. R. belong to Kazakhstan. It also has a huge deposit of coal, very rich ores of gold (Altai gold), silver and zinc, as well as large reserves of crude oil.

Before Revolution all these riches were burried under-ground untouched. Kazakhstan was a poor and backward country, populated by nomads, whose main occupation was primitive cattle breeding, but even in this they were forced into sterile regions by their "colonisers"—Great-Russian Settlers. The only marketable products of these nomadic people were meat and hide, which were exported to Central Russia. There was not a trace of any Industrial Enterprise, no regular Roads and no linking Railways,

To-day the Emba Oil Fields of Kazakhstan are second in size to Baku gelds. A large Coal Industry had sprung up with Karaganda as its centre. The local Lead Smelting Works produce over 75% of total Lead smelted in the U. S. S. R. The railways of Kazakhstan cover 4,160 miles, and its newly created waterways—3,700 miles.

The development of another National Republic—Uzbekhistan, as compared to its miserable past, repeats one and the same picture. Uzbekhistan—the land of the richest Cotton Plantations in Russia—was merely allowed to supply this valuable product to Central Russia. Not an ounce of local Cotton was being permitted to be spun or weaved on the territory of Uzbekhistan. To-day the Uzbekh Republic boasts of a number of large Textile Mills, the one at Taskent—capital of Uzbekistan—is equipped with 112 thousand spindles and over 3 thousand looms. A large Fertilizer Plant is built in the vicinity of Taskent, whose products are to enrich the Cotton Fields of the Republic. Over 50,000 of native population is now engaged in the various textile enterprises. An Uzbekh Intelligentsia—technicians and engineers—had also come into existence.

Yet the third Republic, Armenia, till 1914 had been mainly an agrarian undeveloped and even primitive land. Its few local factories were rather a kind of handi-craft shops, the like of which one meets at Kashmir in India. The inexhaustible natural resources of this beautiful mountainous country—

Armenia—with its picturesque rivers and lakes, and its colossal deposits of valuable minerals—were unexplored and unexploited. The Electric power of Armenia, the land blessed with such huge natural hydraulic power, used to be supplied by only two hydro-electric power stations with the capacity of merely 250 kilowatts. To-day a number of hydro-electric stations have come into existence with combined annual output of 350 kilowatts. The extensive development of industry took place. New branches of industry have been launched and the old ones radically reconstructed. A large Synthetic Rubber Works appeared in Erivan—the capital, whereas the newly built Cement Factory, at the Davalin sands, at the foot of the long range of mountains rich in limestone —produces 114 thousand tons of best quality of Cement every year. A Machine-building Plant, manufacturing Engines and Compressors, adds to the economic prosperity of the Republic. A new Tobacco Factory manufactures 1,700 million cigarettes annually. The annual output of Cotton exceeds 22,000 tons and the large Textile Mills with total 1,17,000 spindles produce 33 million yards of Cotton cloth per year.

Whereas the fourth Socialist Republic—Ukraine—one of the richest corners of Russia, which due to its extensive mineral wealth had been industrially developed even in Tzarist time, could boast by the end of the first Five-year Plan to possess such treasure of Creative Engineering as Dnieper Dame—the second largest Hydro-Electric Station of the

world and which supplies with cheap energy not only wast family of the sorrounding Concerns but also different distant Industries of the U. S. S. R. Its happy location—the town of Dniepropetrovsk—literally existed on Electricity, beginning from cooking and ending with the heavy industrial works, and its bright, festive illuminations—remained festive throughout the whole year, as dazzling chain of diamonds, as they are seen from the air. The destruction of this Dame by Russians themselves in the face of the German invaders had resulted in formation of the wast marches so that its present reconstruction is faced with extremely unfavourable circumstances and will require double effort and skill to bring it back to its former siluets.

Side by side with the Industrial development an extensive Agricultural development had taken place in National Republics. Modern scientific methods of cultivation and stock-raising were introduced into hitherto primitive nomad Regions, with extensive use of tractors, harvester combines and other agricultural machines.

Some of the figures for the year 1941-42 are shown below :—

Ukraine—88,000 Tractors—27,000 Harvester Combines.
Byelorussia—8,100 Tractors—4,000 Threshing Machines.
—1,200 Flax-pulling Machines.
Khirghizia—3,964 Tractors.
Tartaria—6,885 Tractors—2,871 Hervester Combines.

New crops have appeared in National Republics.

Rice growing had been introduced in Ukraine—essentially a wheat-producing country, whereas large Tea Plantations have sprung in Trans-Caucasia.

Such are the glimpses of prosperity in conditions of prevailing National harmony.

Not without pangs of bitter suffering this prosperity had come into existence. The forces of foreign invasion which in combination with Russian Counter-Revolutionary forces and with the blessings of Mr. Churchill, had swept Byelorussia, Ukraine and parts of Central Russia, have destroyed in their retreat every bit of poor Industrial prosperity, have completely wrecked the economic system of these Regions. And inasmuch as the retreat of Counter-Revolutionary forces of Generals Denikin and Wrangel took place at the first instance into the mountainous regions of Caucasia, it were these wretched regions which suffered the shock of the greatest rage, plunder and destruction. Thus primitive backward Nationalities of South-West parts (Caucasia, Crimea) with their starvingly-poor unbalanced economic system and handi-craft forms of Industry—were thrown into complete destitution, starvation and ruin.

Whereas, on the planes of Asia, where the newly born Eastern Republics struggled to rise out of their misery, the reactionary elements—*Mullahs*, *Bhais** etc. (the population of those parts being predominantly Muslims)—have retired beyond Afganistan borders. And having organised themselves into the plundering

* Bhai—Zeminder, feudal chief.

bands—known as *Basmachi*—were paying regular visits of terror, plunder and rape into the territories of the young Soviet Republics. On one occasion *Basmachi* would endeavour to blow up a newly constructed bridge or a dame, so as to inundate and destroy the crops. On another—they would murder male population, inhumanly torture the representatives of Administrative Apparatus or Communist party, by cutting their ears and noses first. Then they would take away women, live-stock and other available articles. So much so, that it has taken years for the fighters of the glorious Red Army to wipe out the menace of *Basmachi*, which persisted long after the last remnants of the foreign invaders and the forces of Wrangel and Denikin, were annihilated or thrown out of Russia.

Thus it was not the situation of peace but that of stormy quakes, which accompanied the first years of progress of Russia itself and her National Republics, so that it was only the organised structure of National Harmony that helped Soviet Russia to outstand all these political and economic shocks and to emerge out victoriously as a mighty power, now spoken of as the U. S. S. R.

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